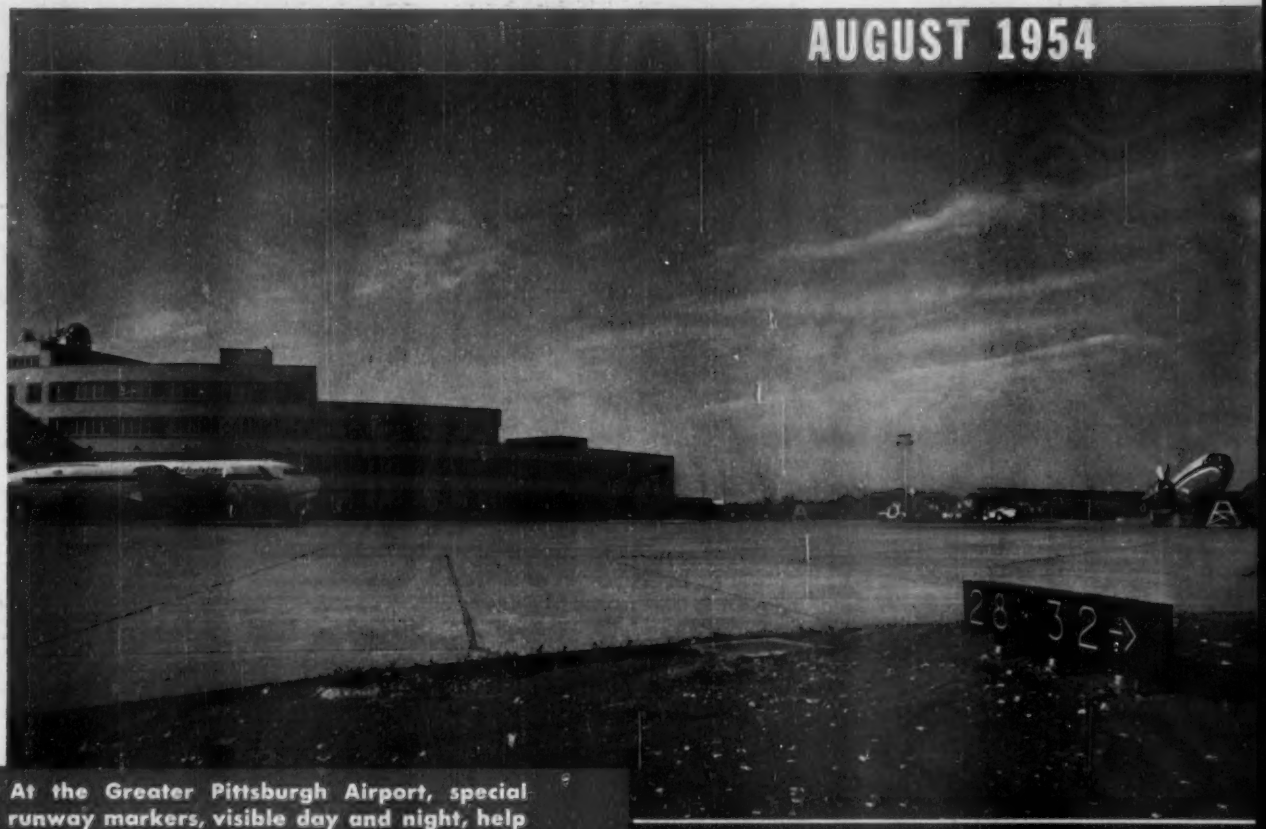
The American City

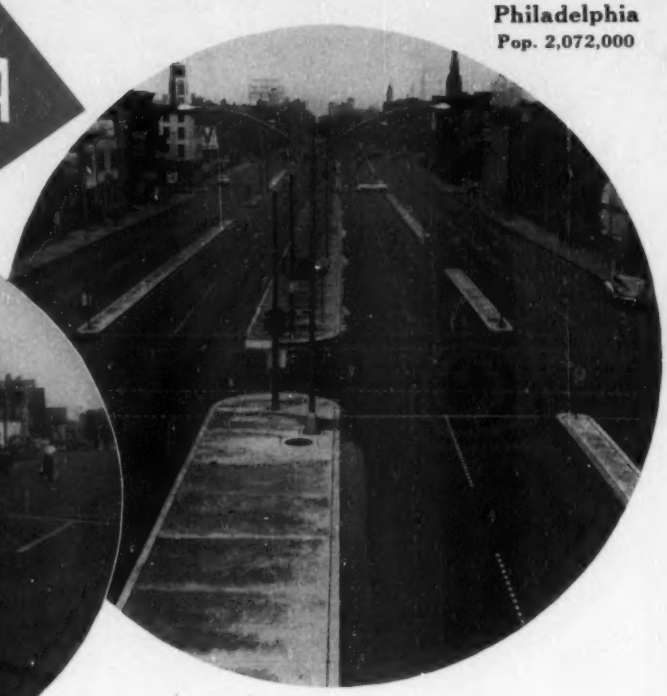
AUGUST 1954



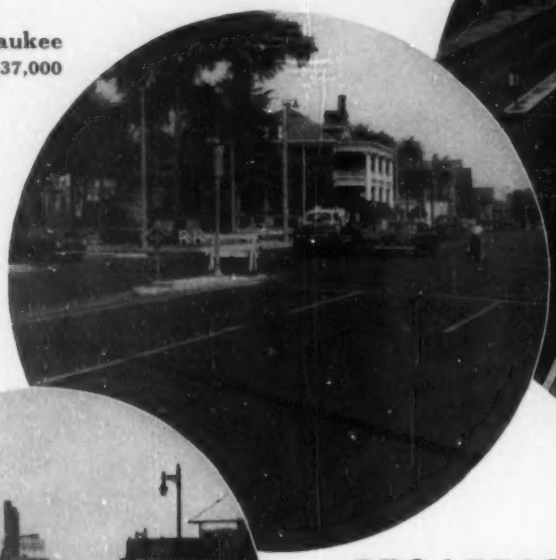
At the Greater Pittsburgh Airport, special runway markers, visible day and night, help guide all plane movements. See pages 86-87.

From PHILADELPHIA

Philadelphia
Pop. 2,072,000



Milwaukee
Pop. 637,000



Louisville
Pop. 369,000

Wilmington, Del.
Pop. 110,000

McAllen, Texas
Pop. 20,000

REGARDLESS OF SIZE, *cities agree on resilient Texaco Asphalt paving*

The more than 1,500 U. S. cities which have constructed resilient Texaco Asphalt paving are a representative group. They range from cities of well over 1,000,000, like Philadelphia, down to cities of approximately 20,000, such as McAllen, Texas.

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Texaco Asphalt Cements, Cut-back Asphalts and Slow-curing Asphaltic Oils offer city officials a number of types of Asphalt construction for their streets. To help you select the most suitable type for your streets, we have prepared two booklets, which can be secured without obligation by writing our nearest office.

to McALLEN

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Boston 16 Chicago 4 Denver 1 Houston 1 Jacksonville 2 Minneapolis 3 Philadelphia 2 Richmond 19

TEXACO

REG. T. M.

TEXACO ASPHALT

AUGUST 1954

The American City

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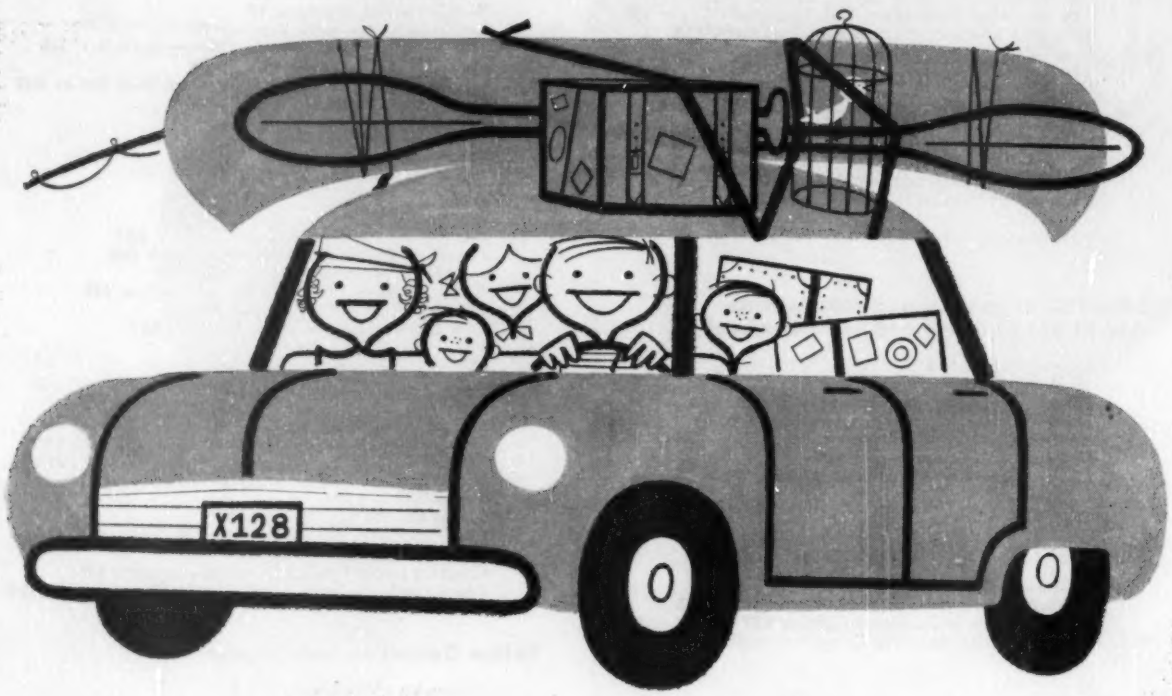

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New Orleans to Houston..	**80¢**
St. Louis to Hot Springs, Ark.	**80¢**
Los Angeles to Boston....	**$2.00**

These are Station-to-Station rates for the first 3 minutes, after 6 o'clock every night and all day Sunday. They do not include the federal excise tax.

BELL TELEPHONE SYSTEM

Street Cleaning & Refuse Disposal

Borrow Pit for a Sanitary Fill

A worked out borrow pit outside the Augusta (Ga.) city limits serves as one of the two active fillsites in Richmond County. Here, the operator uses an International crawler tractor and Drott Bullclam to spread a cover over the refuse. Sites dispose of over 90% of refuse contributed by 150,000 persons.

Windrow to the Center

LaPorte, Ind., with its wide downtown streets, windrows snow away from the curb to the center of the street where it can be picked up by loading equipment. The center windrow of snow permits two-lane traffic with a minimum of danger on the icy streets. The city has found that its standard Allis-Chalmers AD-4 motor graders can do this work without need for any equipment other than its standard moldboard.

Chipper Dividends

A TREE that grows in Cleveland, Ohio, may not have the same literary symbolism as the one that grew in Brooklyn, but it creates the same kind of municipal problem as all trees that grow in an urban area—the expense of the disposal of tree clippings and trimmed branches.

These branches, when cut from the tree, are bulky to load, costly to transport, and a nuisance to dispose of for they generally call for the building of fires that create objectionable smoke and fire hazards. Fortunately, in the past four years, we have overcome these problems by the use of an Asplundh Chipper.

As a result of our Chipper, we have realized an interesting dividend. We pile the chips in the various parks close to the chipping operation and allow them to weather for a year or so. This material is then used in our nursery to control weeds and conserve moisture, and to mulch our newly planted street trees. Formerly, we used other products such as ground corn cobs which cost us around $20 per ton. It is difficult to compile costs on the use of the Chipper, but the savings are so apparent that it scarcely seems necessary.

EDWARD H. SCANLON
Commissioner of Shade Trees
Cleveland, Ohio

THE AMERICAN CITY

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Garbage disposal can be a difficult problem. Many communities have found the answer in sanitary landfills, like this one in Sonoma County, Calif. The garbage is spread in a trench 460 feet long and 20 feet wide at the top. It is compacted and buried beneath clean earth. The compacted and smoothed surface is then ready for future development.

This Caterpillar D4 Tractor with No. 4A Bulldozer can spread six tons of awkward-to-handle material in only 30 minutes! The Cat* D4 Tractor maintains traction and handles big loads in the most slippery going. At every two-foot level of the fill it spreads a six-inch layer of dirt from the top of the trench. The hydraulically controlled angling blade of the No. 4A Bulldozer is a natural for this work.

Sonoma County owns this and two other Caterpillar track-type Tractors. Many cities and counties have discovered the advantages of owning Caterpillar equipment. Long life and high resale value are built into every Cat machine by simple design and honest ruggedness of construction. And Caterpillar Dealers everywhere offer fast, skilled service, backed by large stocks of genuine factory parts.

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**NAME THE DATE...
YOUR DEALER
WILL DEMONSTRATE**

Parks & Playgrounds

Edited by JOSEPH PRENDERGAST, Executive Director, National Recreation Association

$20,000,000 for Recreation in Philadelphia Capital Program

Nearly 20 million of the $400,000,000 capital program approved by the Philadelphia City Council for 1954-1959 will go for badly needed recreation facilities.

The program calls for the construction of four major swimming pools, one in each section of the city. Existing pools have no recirculation systems and only one set of toilets and showers, making it impossible to have co-recreational swimming activities. Each new proposed pool will replace two or three of the old ones. It is expected that supervision and maintenance costs will be below what is now required.

Work of correcting deficiencies of existing playgrounds in order to develop a modern, well-rounded recreation program will be continued. Facilities will be provided for athletic activities for the older boys and men, and areas will be set aside for pre-school children and mothers, for women's and girls' activities, for craft activities, music, drama, and similar interests.

•

How Much Money for Recreation?

City officials seeking a yardstick to gauge expenditures for recreation and park services will be interested in the new per capita figure suggested by the National Recreation Association. Based on widely accepted standards for community recreation and park areas, facilities, leadership, activities and services, adequate municipal recreation and park activities would cost about $6 per capita, the Association finds. This figure covers current annual expenditures for leadership, operation, and maintenance, but not capital items.

One half of this amount, or $3 per capita, would go for organized recreation services. This would cover the cost of leadership, supplies, and other expenses incidental to the program conducted at playgrounds, playfields, buildings, and indoor centers and for maintaining and operating these facilities, as well as golf courses, picnic centers, swimming pools, tennis courts, and other properties used for active recreation.

The remaining $3 per capita would be spent for other forms of recreation and park service, including many traditional park department services. Among these are the maintenance of landscaped parks and other areas not used for active or organized recreation, the operation and maintenance of such features as zoological parks, botanical gardens and museums and the provision of special activities such as concerts.

•

Recreation in the Long-Range City Plan

Recreation planning experts on the staff of the National Recreation Association report more interest than ever before in comprehensive municipal recreation surveys and long range plans. Full surveys have recently been completed by the Association for the following cities: Tuscaloosa, Ala.; Birmingham, Ala.; Weymouth, Mass.; Warren, Pa.

Studies in progress at the present time include comprehensive surveys and long-range plans for South Bend, Ind.; Paramus, N. J.; Des Moines, Iowa. The NRA staff is completing a re-evaluation of present recreation-park facilities and future requirements in Royal Oak, Mich., and Los Angeles County, Calif.

•

Municipal Recreation Appointments

Recreation Personnel Service of the National Recreation Association reports the following recent appointments: Gerald G. Raderstorf, Superintendent of Recreation, Oak Park, Mich.; Arnold Halpern, Superintendent of Recreation, Coeur d'Alene, Idaho; Edward B. Martin, Jr., Superintendent of Recreation, Borger, Texas; Suzanne Lessard, Assistant Superintendent of Recreation, Springfield, Vt.; Ara Mantarian, Assistant Superintendent, Hastings-on-Hudson, N. Y.; Carl I. Pirkle, Jr., Superintendent of Recreation, Dyersburg, Tenn.; David J. Gessner, Superintendent of Recreation, Monroe, Ga.; Joseph E. Curtis, Superintendent of Recreation, Oceanside, L. I., N. Y.

Nation's Recreation Officials to Meet in St. Louis

Plans for the 36th National Recreation Congress to be held in St. Louis, September 27 to October 1, are nearing completion. Municipal recreation officials from every section of the country will participate in the week-long series of meetings.

Of special interest to municipal officials will be section meetings on administrative problems of chief executives of local recreation and park agencies; consolidation of recreation and park functions; job analyses for recreation positions; how to secure more land for recreation; property development and maintenance problems; new techniques in public relations; swimming pool design and construction for effective operation and use; urban redevelopment.

The section meeting on "Urban Redevelopment — Rehabilitating Our Neighborhoods" will be chaired by George Hjelte, General Manager, Los Angeles Recreation and Park Department. A representative of the Division of Slum Clearance and Urban Redevelopment of the Housing and Home Finance Agency will also participate.

Chairman of the meeting on swimming pool design and construction will be Richard L. Brown, Assistant Director of the Water Safety Service of the American National Red Cross and secretary-treasurer of the Conference for National Cooperation in Aquatics.

Other participants will include C. W. Klassen, Chief Sanitary Engineer, State Department of Public Health, Illinois; Bob Bonney, Superintendent of Recreation, Klamath Falls, Ore.; and Henry Schubert, Superintendent of Recreation, Dearborn, Mich.

A preliminary report of a committee on Design of Outdoor Swimming Pools of the Conference for National Cooperation in Aquatics will be made.

The sub-committee, headed by George Butler, Director of Research of the National Recreation Association, has been studying the relative merits of pools that differ in type, size, depth and design. Most of the pools studied have been municipally owned and operated.

city street superintendent reports

"Adams TraveLoader almost doubles work capacity"

The growing popularity of the Adams TraveLoader for city work is well expressed by Mr. Dominic De Meo, Superintendent of Streets, Canton, Ohio:

"We like the TraveLoader better than any loading machine we have ever operated. It does almost twice the work of bucket-type, tractor-mounted loaders, enabling us to complete more projects with the same manpower. Features we particularly like include high, central position of the cab, affording clear view of work—adjustable conveyor for fast loading of trucks of all types and sizes—speed and economy of operation."

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During winter months cities use the TraveLoader for high-speed snow removal . . . Mr. De Meo says they also use their TraveLoader for loading abrasives, thus getting their ice situation under control much sooner than before.

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Street Construction & Maintenance

From the Sixth Highway Engineering Institute*

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. . . soluble in petroleum oils; a disadvantage where pavement is exposed to severe and frequent oil spills.

. . . immune to action of salt and calcium chloride, used for ice removal on pavements.

. . . sensitive to temperature changes; able to adhere readily to most aggregates; fire resistant; nonodorous; able to absorb heat, helping it to remain ice-free in winter.

—From a paper by Harold L. Tilton, Division Asphalt Manager, Shell Oil Company.

The Right Conditions For Surface Treatment

SURFACE treatment, explains E. M. Howard, district engineer for the Asphalt Institute, has a multitude of names: armour coat, seal coat, chip seal, inverted penetration. In all cases, it describes the application of liquid bituminous material, covered immediately by a layer of aggregate which is usually rolled into the bituminous material before it sets.

It should not be expected to do the work of strengthening a pavement that is manifestly weak. If an area has "alligator" cracks generally distributed, or is distorted and rutted, one should add thickness to the surface usually by material from a hot-mix plant.

The choice of asphalt for surface treatment generally depends on the preference expressed by the engineer doing the work. Some prefer hot applications of penetration-grade asphalts; some prefer cutbacks, either MC's or RC's; others prefer emulsified asphalts. Under proper weather conditions, hot application asphalts are the most foolproof. The setting time is less, material is less costly, and greater quantities can be distributed in one application.

For enlivening an old bituminous surface which shows evidence of drying, cutbacks offer the advantage of allowing portions of the light ends to penetrate the old surface and restore some of the material that has evaporated. The MC types can be used with slightly dustier aggregates than the RC types.

Emulsified asphalt, especially the high-viscosity type, is an excellent material for constructing surface treatments where it is difficult to heat the asphalt and where damp aggregate must be used.

The aggregate, for best results, should be as nearly one size as is possible. For seal coats or single-surface treatments which will be exposed directly to traffic, the maximum size of the aggregate should not exceed ½ inch. Larger aggregates give a surface which is unpleasant to traffic because of the friction which creates roar and bouncing, and also is more vulnerable to "whip-off."

For new construction, double and triple surface treatments, generally 1-inch aggregate is used in the initial course, ½-inch in the second, and ¼-inch in the next, if used. The objective of surface treatment is to cover the asphalt with a layer of aggregate not thicker than a single particle. One can determine the total quantity required by measuring the amount of aggregate used to cover a square-yard area, and by then adding 10%.

Cool air temperature is the most adverse weather factor since it makes drying very slow. Hot applications on cold pavement do not produce efficient surfacing. The asphalt chills almost immediately and will not grip the aggregate. Cutback asphalt used in low temperatures loses its solvent very slowly, retarding the adhesion of the aggregate and creating a "whip-off" condition.

Skidproof Your Asphalt Streets

IN THE CONSTRUCTION or resurfacing of bituminous pavements, avoid an excess of bitumen, recommends Archie H. Easton, director of the University of Wisconsin's Motor Vehicle Research Laboratory. An excess of bitumen causes low coefficients of friction, especially when the surface is wet.

In designing a mix, be sure to use aggregate that has been fractured, rather than the unfractured, smooth and round particles. Tires will polish the latter and dangerously reduce the coefficient of friction. "Sharp" sand, used as the principal aggregate in a bituminous wearing course, will produce a skid-resistant "sandpaper" surface.

* Conducted by the University of Wisconsin, College of Engineering, in cooperation with the Wisconsin Highway Commission and the Wisconsin County Highway Commissioners Association.

Waukesha, Wis., uses asphalt to rehabilitate an old street. In this case, the city uses a Barber-Greene paver to lay a Colprovia cold-laid sheet asphalt surface.

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Kentucky Cities Solve Sewerage Problems

Louisville Decides Who Pays

THE sewage-treatment plant that will be built to serve Louisville and its metropolitan area will be the responsibility of the Metropolitan Sewer District. In addition, the District is responsible for the care of sewers in Louisville and parts of Jefferson County. A sewer-rental charge based on 50% of the water bill provides the financing.

Thus far, the District has spent $1,500,000 on the treatment-plant program, chiefly for interceptors built in connection with flood-wall construction. However, the Kentucky Water Pollution Control Commission wanted to see this pollution-abatement program move along a little faster and demanded a definite commitment from the District on the completion date. At this point, the Commission balked. It held the opinion that without additional revenue, it could not build the interceptors and treatment plant if the regular program of maintenance, rehabilitation, and extensions were to continue.

The District further felt that the city should finance the treatment out of general revenue funds. However, the city took the position that the District served areas outside the city and that the principal growth would be outside the city limits. Therefore, the city believed that the District should finance the entire project.

The Louisville Chamber of Commerce broke the deadlock with a compromise. Under its terms, the city pays for the treatment plant by general obligation bonds, and the District builds the interceptor. The people of Louisville approved a $6,000,000 bond issue to build the treatment plant last November by a vote of four to one. Thus treatment for 90,000,000 gallons of sewage per day is now assured.

Morris Forman is chief engineer for the Louisville and Jefferson County Metropolitan Sewer District.

Initiates Financing Program

BARDSTOWN, a city of almost 5,000 people, just south of Louisville, has an extensive sewer system, but no sewage-treatment plant. However, the city has been growing so rapidly that a large area is served only by septic tanks. When the city decided to sewer this area, the Kentucky Water Pollution Control Commission refused to grant a permit for the extensions until a commitment was made about sewage treatment.

Since there was pressure on city officials to provide sewers, treatment of the sewage was seriously considered. The problem was eventually resolved by allowing the extension of sewers for public health reasons. However, the provision was made that the city would authorize the bond issue necessary to pay for the treatment plant and establish a sewer charge sufficiently large to amortize the entire issue.

To assure bond buyers that the service charge would provide enough earnings, the city is establishing the charge before issuing the bonds, holding the revenue in a special fund for the proposed treatment plant.

The plant will provide complete treatment. Russ Marshall is city engineer.

Selects Chemical Precipitation

THE sewage-treatment plant for Sanitation District No. 1 of Kenton and Campbell Counties is nearing completion. The plant will serve Newport, with a population of 31,000, Covington, with a population of 65,000, and 14 other unincorporated cities. The plant is designed for chemical precipitation or intermediate treatment, and includes facilities for sludge incineration. The plant and interceptors will cost approximately $7,500,000.

W. D. Anderson is general manager of the District.

Provides Complete Treatment

PRINCETON was served by an overloaded primary-treatment plant. The problem became acute when the city accepted industrial waste from a hosiery mill, which resulted in a high coloring and depletion of oxygen from the receiving stream.

After several meetings of city officials and affected property owners, the city agreed to construct a complete treatment plant which would be provided with special features to treat the industrial waste.

The plant, which is now under construction, will cost $218,000. Princeton is a city of 5,500 population in eastern Kentucky. Edward H. Johnstone is city attorney.

New Plants

LA CENTER, design population 1,600, built a complete sewer system and complete sewage-treatment plant at a cost of $114,000 for sewer extensions, and $56,492 for the sewage-treatment plant. James M. Jones is mayor.

Mayfield, a city of 9,000 people in the southwestern part of the state, will shortly complete an activated-sludge treatment plant. This plant is replacing an overloaded primary plant. Total cost of the facility will be $485,500. Scott Lemon is mayor.

Barbourville, in southeastern Kentucky, is building a primary treatment plant for a design population of 4,200, at a cost of $96,165. Alry Bays is mayor.

Coal Washing

WASTE from coal washers is one of the major industrial waste problems in Kentucky. Considerable progress was made toward the solution of this problem last year. At present, of 59 operating installations, 30 are satisfactory, 13 need minor corrections, and only 16 remain unsatisfactory.

Editorial Note: These notes are from the files of the Kentucky Water Pollution Control Commission and were compiled by Louis F. Birkel, executive director, and the above-mentioned city officials.

BOX ALARMS ARE POSITIVE ALARMS

Large city or small town — you need the advantages that a fumble-proof Municipal Fire Alarm System can give you.

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Cincinnati's Bicycle-Testing Lane

FOR THE FIRST TIME in the United States, to the best of our knowledge, the principle of vehicle inspection is extended to bicycles. This program was developed on the theory that children, who will some day drive automobiles in our crowded streets, cannot be made safety-minded too early in life.

It was also encouraged by the fact that there are 30,000 bicycles in Cincinnati and an alarming increase in accidents involving children on bicycles during each of the last three years, reaching an increase of 32% in 1953 over 1952.

The safety lane is constructed with retractable wheels and a trailer hitch so it can be transported around the city. The program has started with a schedule at various playgrounds. Inspection is on a purely voluntary basis.

All bicycle riders who "pass" the lane are given free of charge a reflective tape license with serial number. The serial numbers will be registered with the Police Division and will serve the additional purpose of identification for recovery of lost and stolen bicycles. Instruction in safe bicycle operation is given at the time of inspection.

Operation of the Safety Lane

A child can ride his bike up the ramp from the rear, and the front and rear wheels settle into two wells equipped with electrically moving spools. As the brakes of the bicycle are applied, they set up a drag factor on the rear spool and the amount of pounds exerted is shown on an adjacent gauge.

Meanwhile, the front spool is registering the amount of "wobble" in the front wheel, showing the alignment by the use of another gauge. When current is turned off, the child can accelerate the bike and a reading will be obtained from the rear spool, which has now disengaged, showing the speed. At the same time, the officer assigned to the lane is checking horns, bells, lights, seat, and pedals.

The idea for this inspection lane was developed by the Safety Education Section of the Cincinnati Police Division, under the supervision of Lt. Arthur Mehring. The lane was designed and constructed by the Supervisor of Municipal Equipment, Robert Miller. The Rotary Club furnished the reflective license stickers and the Junior Chamber of Commerce volunteered personnel to assist the police officer making the inspections throughout the city.

Bicycle safety lane pioneered by Cincinnati.

C. A. HARRELL
City Manager
Cincinnati, Ohio

How the Green Bay Fire Department Uses Dry Chemical

IN my 28 years of service in this department, I have seen fire apparatus change from hard rubber tires to the present-day fire trucks. Now we have four engine houses, two on the east side of the Fox River and two on the west side. Our apparatus includes three 1,250-gallon Mack pumping engines, one American-LaFrance 65-foot all-steel aerial truck, one combination ladder and pumper, and one F.W.D. rescue truck. All equipment carries two-way radios. Personnel of the Green Bay Fire Department numbers 86 men.

Our experience with Ansul dry chemical and extinguishers has been quite satisfactory. Since 1940, we have mounted hand shakers and 30-pound extinguishers on all our equipment. In January 1941, two 350-pound extinguishers were mounted on a Reo chassis and 12 years later two 150-pound extinguishers were purchased.

After our new four-wheel-drive rescue squad truck was put into service in December 1952, the two 350-pound extinguishers were mounted on the truck and in January 1953, the two 150-pound extinguishers were mounted on the American-LaFrance squad truck. This gave us coverage on both sides of the river.

Most of the fires in this category have been extinguished by the use of the 30-pound type, with the small hand shaker extinguisher an ideal means for putting out small fires around car motors and oil heaters.

Once, we arrived at the scene of a transformer fire to discover the ground completely aflame due to a leak in the transformer of 3,000 gallons of oil. After we had laid two lines from the 350-pound extinguishers and charged, it took us five minutes to extinguish the flaming oil on the ground as well as to put out the transformer fire and the burning insulation on the wires. The combustible material of Class A type was then cooled with the use of fog nozzles.

A second fire at which we used the large extinguishers was in the baking oven of a chair manufacturing plant. With the long range of the extinguishers we were able to reach the fire. We did not use water because the sudden change in temperature would have warped and cracked the walls in the oven. After the lines were charged on the 350-pound extinguishers, it took about one minute to extinguish this fire.

J. A. ANDERSON, *Chief*
Green Bay Fire Department
Green Bay, Wis.

"30%
SAVING AND BETTER SERVICE"
for Orrington, Maine

The CAT* No. 212 Motor Grader covers 27 miles of road in the town of Orrington—clearing snow in winter—building and maintaining roads in summer. And according to Harold B. Gilbert, town agent, the machine not only gives better service than the truck plows formerly used but has saved the taxpayers 30% in the cost of the job.

"We've found," says Mr. Gilbert, "that by good grading, ditching and shaping the roads in summer, it's easier to keep them clear of snow in winter. Operation and maintenance of this motor grader costs less than hiring trucks to plow. It's an economical piece of equipment for us."

When you're choosing equipment, consider these superiorities of Caterpillar Motor Graders:

- Completely built – not assembled – by one company, with weight, power and speed in perfect balance.
- Engine directly powers all controls to give constant power and speed no matter how many controls are used at one time.
- Operates on No. 2 furnace oil without fouling.
- Full range of blade positions without changing links.
- Clear view of blade and wheels – with operator *seated*.
- Control brakes prevent blade creeping under load.
- Rugged, long-life construction throughout.
- Complete selection of accessory equipment – snowplow, cab, scarifier, etc.
- Steady performance, backed by reliable dealer service.
- Highest trade-in value in the field.

Ask your Caterpillar Dealer for a demonstration on your job, and *proof* that these machines can save the taxpayers' money.

Caterpillar Tractor Co., Peoria, Ill., U.S.A.

CATERPILLAR*

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NAME THE DATE... YOUR DEALER WILL DEMONSTRATE

Our Municipal Notebook

For Higher Standards of Safety and Appearance in Federal-Aid Highways

THE PARTNERSHIP between the United States Government and the several States in promoting better highways received interesting consideration recently from two large and important groups—the National Council of State Garden Clubs and the General Federation of Women's Clubs. Both have taken action approving of the principle that federal highway aid shall be limited to the states that show respect for their own highways by imposing on them standards of safety and appearance.

Under the Federal Highway Act federal aid is already made conditional upon certain engineering and financial requirements. The new proposal is that standards of appearance and protection shall also be required of a state if its highways are to receive federal aid. The existing Act contemplates and permits some roadside landscaping and vests some discretion in the U. S. Bureau of Public Roads; but the present provisions require restudy, revision, and additions.

The existing Act does not contemplate or require any protection of the highway by regulation or control of the private property which adjoins it (under the police power of the state) as a condition of the receipt of federal aid. This is a serious omission.

Resolutions Adopted

On April 8, 1954, the 25th annual meeting of the National Council of State Garden Clubs adopted a resolution urging that the Federal Government give financial assistance to a state for its highway construction program only if the state adopts and enforces rules and regulations to protect its highways against dangerous and ugly commercial intrusions and marginal usages that reduce carrying capacity and safety.

At its annual convention held in Denver in June 1954, the General Federation of Women's Clubs adopted unanimously the following preamble and resolution:

Whereas, the General Federation of Women's Clubs and its member clubs have been deeply concerned over the growing hazards to traffic on our highways, and also the need for protecting the scenic beauty of the roadsides; therefore,

Resolved, that the General Federation of Women's Clubs in convention assembled June, 1954, urges the Congress to develop standards for adequate protection for the safety and beauty of highways as a requirement of government cooperative effort with States in building highways.

The resolution had previously received the approval of the Executive Committee of the General Federation and had been sent in advance to every Club president in the United States with the call for the convention.

The next step would seem to be to seek favorable action by the Association of State Highway Officials and other groups interested in highway development. It will then be appropriate to ask Mr. F. V. du Pont, U. S. Commissioner of Public Roads, to promote suitable action by Congress.

ALBERT S. BARD, Vice-Chairman
National Roadside Council.

Planning of New Town of Kitimat

A DETAILED ACCOUNT of the planning of the new town of Kitimat, British Columbia, appears in the July issue of the *Architectural Forum*, under the title, "Industry Builds Kitimat—First Complete New Town in North America." The town which is being built by the Aluminum Company of Canada to accommodate workers for a gigantic new smelter, is located about 400 miles north of Vancouver, just inland from the Pacific coast. If built according to present plans, Kitimat may eventually become the fifth largest community in the western Canadian province.

In discussing the reason why the Aluminum Company decided to build the town, the article quotes J. B. White, the company's vice president in charge of personnel:

"No modern large-scale business can be successful without a loyal, competent and happy work force. . . . We want the very best possible living and working conditions at Kitimat. . . . We are not real estate operators nor are we politicians. We are not seeking to make money out of townsite developments nor do we wish to run a company town, but we do want the future residents to enjoy adequate town planning and community development."

Although designed to accommodate an eventual population of almost 50,000 persons, the town is expected to progress through four stages of growth of 7,000, 13,000, 23,500, and 46,000 persons, respectively. Major planning concepts incorporated in the Kitimat design are: a greenbelt of agricultural, recreational, and forest lands which surround and penetrate into the built up areas; residential neighborhoods which are kept free of through traffic and which have their own parks, elementary schools, and local shopping centers; a designed central shopping and administrative center arranged around a central mall for pedestrians and with parking areas for automobiles extending around the periphery of the center; a planned industrial district where service industry, warehousing, heavy repair, and freight interchange yards are concentrated in an efficient arrangement.

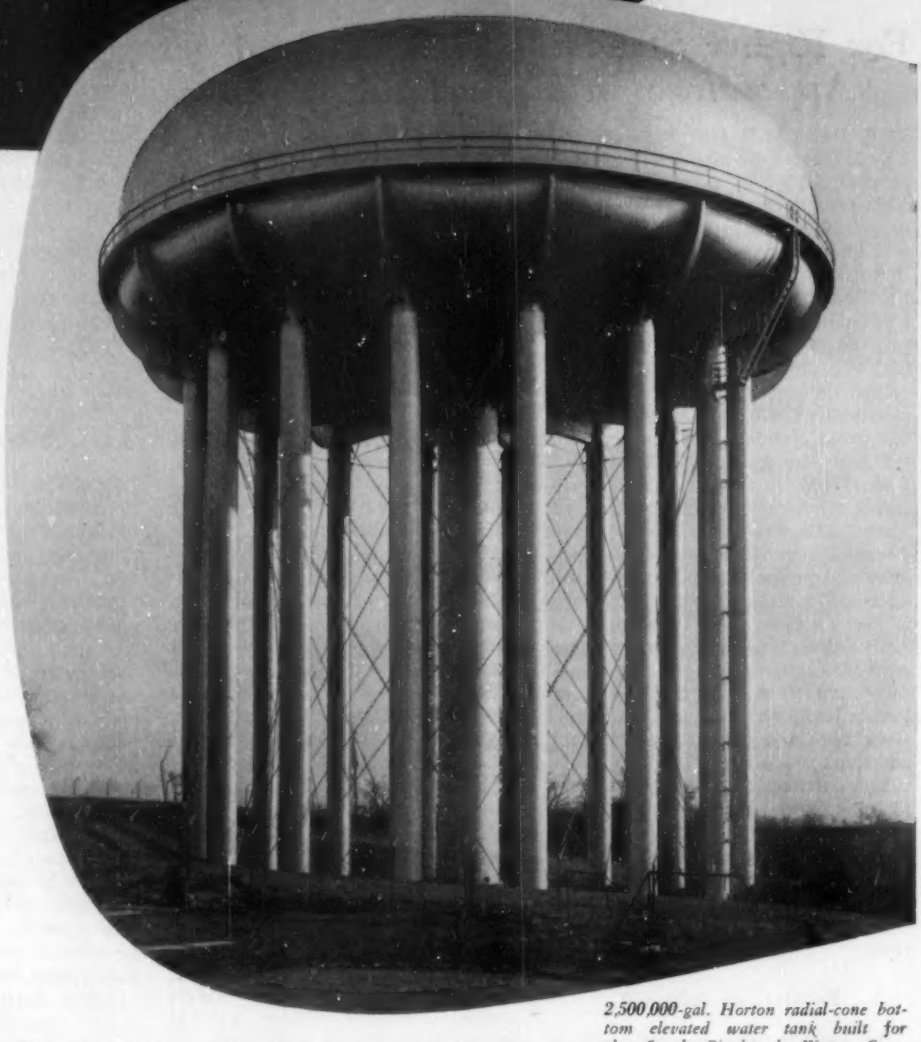
According to the FORUM article a conscious effort has been made to produce a feeling of compactness in the design of the built up areas of the new town in order to avoid the impression of too much open space—an impression which has often resulted in other planned communities.

The planning of Kitimat was organized under the direction of Clarence S. Stein who, with the advice of top-flight consultants on such diverse topics as river control, health, recreation, conservation, government and administration, and commercial facilities, established the functional program upon which the final physical design of the community was based.

The actual design was done by the architectural and planning firm of Mayer and Whittlesey, with the assistance of their own consultants on such factors as climatology, transportation, family and community living, and education.

A picture of one of the Kitimat neighborhoods is on page 111 of the July 1954 issue of THE AMERICAN CITY.

Another good reason



2,500,000-gal. Horton radial-cone bottom elevated water tank built for the South Pittsburgh Water Company for service at Bethel, Penna.

for living in Bethel . . . is the 2,500,000-gallon Horton® elevated water tank that means an increased water supply on hand at all times for domestic needs, industrial service and fire protection. Good water service like this is important in Bethel, Penna.—as it is in every city, town or borough across the nation.

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Atlanta 3	2114 Healey Bldg.	Los Angeles 17	1503 General Petroleum Bldg.
Birmingham 1	1502 North Fiftieth St.	New York 6	3308—165 Broadway Bldg.
Boston 10	1002—201 Devonshire St	Philadelphia 3	1616—1700 Walnut Street Bldg.
Chicago 4	2127 McCormick Bldg.	Pittsburgh 19	3202 Alcoa Bldg.
Cleveland 15	2236 Midland Bldg.	Salt Lake City 4	501 W. 17th South St.
Detroit 26	1501 Lafayette Bldg.	San Francisco 4	1533—200 Bush St.
Havana	402 Abreu Bldg.	Seattle 1	1301 Henry Bldg.
Houston 2	2101 C & I Life Bldg.	Tulsa 3	1625 Hunt Bldg.

Water Supply & Treatment

The World's Largest Standpipe

The world's champion standpipe will hold 12,000,000 gallons of water for storage.

THE WORLD'S largest tank-type water-storage facility has begun to take shape on Nicholl Knob in Richmond, Calif. The new tank, being built by the East Bay Municipal Utilities District, will hold 12,000,000 gallons, exceeding by 2,000,000 gallons the world's next largest water tank in France.

The standpipe will be 79 feet 9 inches high, measured from the bottom of the bowl-shaped base to the top of the domed roof. The walls stand 43 feet high, and the cover rises 27 feet higher at the center. The tank is 200 feet in diameter and approximately 630 feet in circumference. The wall thickness graduates from 24 inches at the base, which is 10 feet deep, to 18 inches at the top. The structure, of the prestressed design, is the first tank to be built in the United States by the Freysinnet method developed in France.

The Rensselaer Valve Company of Troy, N. Y., is supplying the gate valves for the tank. Builders-Pacific of Berkeley, Calif., is supplying a 24-inch plug valve with controls.

"The Duke" Steps Down

Wellington Donaldson

THE first of August saw the retirement of one of America's outstanding sanitary engineers whose career has stretched over more than a half century of professional work. On that same day Wellington (Duke) Donaldson, Deputy Director, New York City's Division of Sewage Disposal, left his desk to "catch up on his fishing," and thus closed another chapter in his professional career. This career began in 1901 when, as a young graduate of the University of Tennessee, he went to work for the Knoxville (Tenn.) Water Company.

In 1906 he transferred to the Birmingham (Ala.) Water Works Co., as a chemist and technical advisor, and in 1908 he began a 12-year period of service with what was later known as the American Water Works and Electric Company of New York. His duties included inspection, design and general trouble-shooting for the company's 30 water works with their 22 filter plants and two iron-removal plants.

In 1920 he started a 15-year association with Fuller and McClintock, New York consulting engineers, as staff specialist on water purification, sewage treatment, and stream-pollution problems.

Outstanding Contribution

One of his most outstanding contributions in this capacity was his experimental studies for the Memphis Water Works in 1921-22, resulting in basic purification processes that are still in use. This year the Light, Gas and Water Division awarded him a commemorative plaque for his outstanding work in this field.

Since 1935 he has been employed by New York City and, with others, has shared responsibility in the planning, execution, and operation of 11 modern sewage-treatment plants with an aggregate capacity of some 750 mgd.

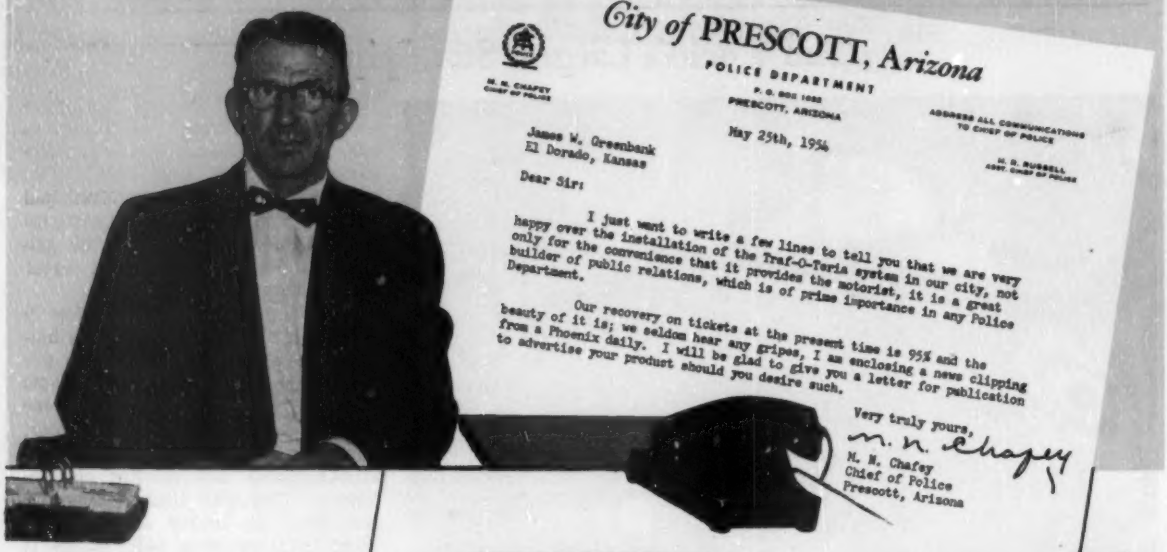
He is an honorary member of the American Public Health Association; a life member of the American Water Works Association, twice recipient of the Kenneth Allen Award by the Federation of Sewage Works Associations; and a former director of the New York-New Jersey Chapter of the American Public Works Association.

In addition, he holds membership in the American Chemical Society, and the American Society of Civil Engineers. He is the author of some 65 papers in technical journals and printed reports. Experimental data reported in many of these papers have been included in standard handbooks and text books.

Nothing Should Stand Between Friends

What is a zero between friends? Nothing, we hope. In the June issue of THE AMERICAN CITY, in a water and sewerage roundup of Georgia cities, we overlooked a zero in noting the population of our friend Douglas as 800 instead of 8,000. Therefore, the accomplishment of Douglas in providing sewer service and sewage treatment for 95% of its total population is ten times more significant than originally reported. We hope that City Manager Glenn Tanner and all 8,000 citizens of Douglas will forgive us and let nothing stand between friends.

"... a great builder of public relations"



City of PRESCOTT, Arizona

POLICE DEPARTMENT

P. O. BOX 1020
PRESCOTT, ARIZONA

M. N. CHAFEY
Chief of Police

ADDRESS ALL COMMUNICATIONS TO CHIEF OF POLICE

H. D. RUSSELL
Asst. Chief of Police

May 25th, 1954

James W. Greenbank
El Dorado, Kansas

Dear Sir:

I just want to write a few lines to tell you that we are very happy over the installation of the Traf-O-Teria system in our city, not only for the convenience that it provides the motorist, it is a great builder of public relations, which is of prime importance in any Police Department.

Our recovery on tickets at the present time is 95% and the beauty of it is; we seldom hear any gripes, I am enclosing a news clipping from a Phoenix daily. I will be glad to give you a letter for publication to advertise your product should you desire such.

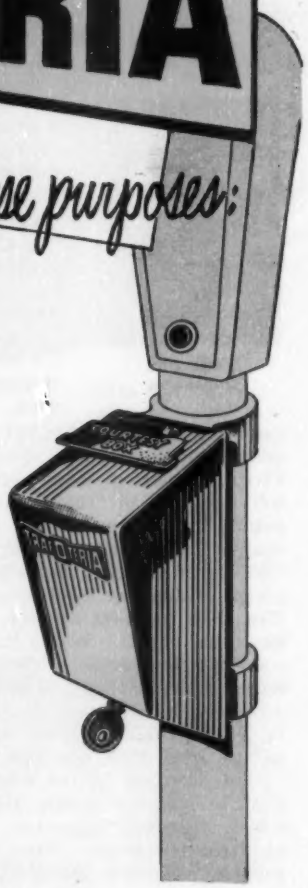
Very truly yours,
M. N. Chafey
M. N. Chafey
Chief of Police
Prescott, Arizona

TRAF-O-TERIA

SYSTEM _designed to fulfill these purposes:

1. Build good will in the community
2. Collect overparking fines painlessly
3. Increase respect for law enforcement
4. Increase the percentage of fines paid
5. Increase net revenue from parking fines
6. Increase voluntary payments by visitors
7. Reduce collections and handling costs
8. Improve the total parking control system

the Only Proven System for Friendly Control



Traf-O-Teria System (Dept. A)
El Dorado, Kansas

Send us the facts about the Traf-O-Teria System.

Name_____ Title_____

Address_____

City and State_____

Need for a Hundred Billion Dollars Of State and Local Public Works

A BACKLOG of urgent public works totaling over $100,000,000,000 faces governmental units all over the country, according to Roger A. Freeman, Special Assistant to the Governor of the State of Washington. In a speech before the 1954 International Conference on Municipal Finance held in San Francisco, Mr. Freeman said that estimates are being discussed of $50,000,000,000 needed for roads, $27,000,000,000 for schools and colleges, $11,000,000,000 for hospitals, $11,000,000,000 for water and sewer works, etc.

Noting that the federal budget is now running at an annual deficit of from three to four billion dollars a year and that national security demands prohibit any substantial budget reductions that might permit a surplus, Mr. Freeman concluded that if the essential facilities are to be built, state and local governments will have to shoulder much of the burden. This, he asserted, they could do for the following reasons:

1. State and local governments are in a good financial position to live up to whatever bonding obligations they may have to undertake. While the national debt soared from $21,000,000,000 to $274,000,000,000 in the last 20 years, state and local indebtedness rose only from $19,500,000,000 to $33,000,000,000.

2. The credit of states and larger municipalities is good, and constitutional debt limitations do not seem to be a serious obstacle at the present time. A survey conducted by the Municipal Finance Officers Association of the United States and Canada showed that all cities replying reported some borrowing margin. Several states, furthermore, have recently raised debt limitations.

In further support to his contention that local and state governments can finance the public works needs, Mr. Freeman noted that the proportion of our total national income that goes to state and municipal taxes is lower today than it was in 1932. At that time, 10.8% of the country's income went to state and local taxes. In 1952 only 6.9% was paid to these governmental units.

However, to facilitate the financing of the many needed projects, Mr. Freeman recommended that state legislatures grant wider home-rule authority to local governments to broaden their taxing powers. He also urged that state governments take a lead in reappraising and overhauling the property tax systems of municipalities. Colorado, Kentucky, Oregon, and several other states have already taken steps to enforce a uniform assessment of property and classes of property, he noted.

Summarizing his points, Mr. Freeman said:

"If the American public wants more and better schools, more and better roads, more and better hospitals, and more and better municipal facilities of all kinds, then it will have to pay for them. It can't get something for nothing, not even from the federal government. But it may be able to get these things for a great deal less by taking care of them locally than by getting them via Washington."

Delaware Supreme Court Upholds Parking Authority Law

The Delaware Supreme Court has upheld the law creating the Delaware Parking Authority and authorizing expenditures of public funds for off-street parking. Expenditures under the law are for a public and not a private purpose, and the public purpose is not destroyed by leasing part of the parking facility for unrelated commercial uses, the Court held.

Housing Rehabilitation in New Orleans

To the Editor of THE AMERICAN CITY:

We of the Department of Housing Improvement and Slum Prevention of the City of New Orleans were much pleased with the prominence given in your April issue (pages 112-113) to Mr. Daste's article, "New Orleans Begins Job of Housing Rehabilitation." But we were a bit upset to read in your May issue (page 15) an editorial which seemed to imply that this "fight-blight" program had affected only five old houses out of 45,000 substandard dwellings in New Orleans.

The New Orleans program, unlike that of many other cities which have a lot of fine plans on paper and very little in the way of field accomplishments, is a workable and working affair.

Some of the achievements here are, we believe, remarkable. The greatest is that of the fine cooperation New Orleans property owners have given us. Briefly, up to July 1, notices calling for repairs have been sent to the owners of 2,396 units, and the owners of a total of 1,489 dwelling units have begun or completed the repairs we asked them to make. These repairs cost an average of $1,500 per dwelling unit.

Although the program is armed with a Minimum Standards Law which provides for the imposing of severe penalties for noncompliance, we have never found it necessary to coerce anyone. We attribute most of this success to the education work we do through neighborhood meetings with owners and tenants and through the use of a personal counseling service we operate to help persons affected by the program to solve their housing problems.

Though all of this may sound easy, it is not. Before we can rehabilitate houses, people, and neighborhoods, we have to help many persons solve their personal problems. Since our budget of $100,000 for the calendar year 1954 is just barely adequate for our inspectors, clerical and administrative salaries and office maintenance, we have to depend heavily on free assistance from a score or more of interested citizens.

We, who are working in the program, are now confident that rehabilitation can correct most of the city's critical housing problems, and that our program is, and will continue to work effectively. With 45,000 substandard dwelling units in the city, our goal is 5,000 units to be rehabilitated each year for the next nine years.

Our pilot block project, involving rehabilitation of five houses, was only the "kickoff," or starting point, in the program. Well over 1,500 housing units are on their way to complete renovation at the present time, as a direct result of the program, and another estimated 5,000 to 10,000 units are being repaired as an indirect result of our efforts.

SHELTON P. HUBBARD, *Director*
Department of Housing Improvement and Slum Prevention
New Orleans, La.

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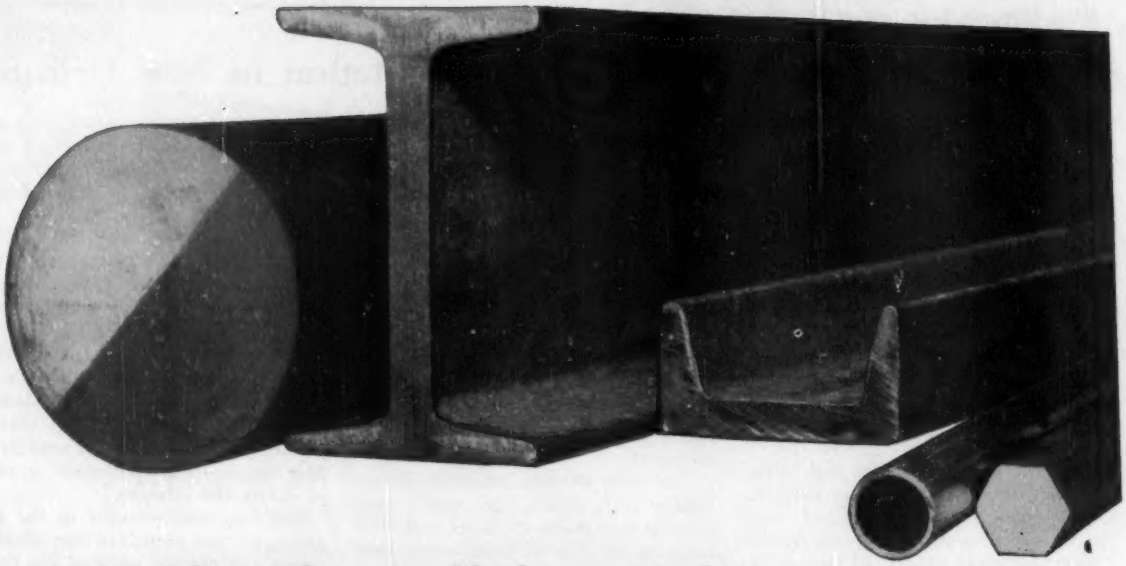

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Kansas City Honors Long Term Employees

NINETY-NINE Kansas City, Mo., municipal employees with 25 or more years of service were honored by the Mayor and members of the City Council at a recent dinner and special program. An additional 689 persons who have been employed by the city for 10 years or more were guests at the special program following the dinner.

In recognition of their long service, each woman received a pin and each man a lapel button, and every employee so honored was given a personal certificate bearing the city's seal and attesting to his length of service with the city government. The record for the greatest length of service went to a water department employee who has been with the city for 59 years.

Better Visual Design of Cities to Be Studied at M. I. T.

A THREE-YEAR STUDY to develop techniques for a better visual design of cities is to be undertaken at the School of Architecture and City Planning of the Massachusetts Institute of Technology. A grant of $85,000 from the Rockefeller Foundation will be used to finance the study.

The research made possible by the grant will be conducted under the joint direction of Gyorgy Kepes, Professor of Visual Design in the M.I.T. Department of Architecture, and Kevin A. Lynch, Assistant Professor of City Planning. Professor Lynch recently spent a year abroad studying the visual character of European cities.

In announcing the grant, Professor Frederick J. Adams, head of M.I.T.'s Department of City and Regional Planning, said, "The project will develop principles and techniques to be used by architects and city planners in designing a more satisfactory urban environment."

First Business Library Now Fifty Years Old

THE BUSINESS LIBRARY, a branch of the Newark Public Library and the world's first publicly supported business library, occupies a three-story building in the heart of downtown Newark. In its 50 years of service to local businessmen, it has amassed an impressive amount of business data and has learned how to cope with practically any business library problem.

To celebrate its anniversary, the library has issued a 36-page pamphlet, "A Half-Century of Power for Business."

Miss Marian C. Manley, who has been in charge of the Business Library since 1925, says there has been a striking change in the focus of businessmen since the depression year of 1931. Twenty-three years ago the heaviest demand was for city directories—very helpful in tracing installment account delinquents. By 1954, local directories had dropped from the 47% of 1941 to only 13% of the total demand, while the use of general reference sources had climbed from 27% to 67%.

Over the years the library has served as a model for dozens of business libraries in the United States, Canada, and other countries. Anyone interested in organizing a business library would find the anniversary pamphlet of value. Copies are free to Newark residents on request to the Business Library, 34 Commerce St., Newark 2, N. J. A charge of 50 cents is made to out-of-town firms or individuals.

Municipal Street-Tree Programs

THE BEST WAYS of providing cooling shade and beauty along the streets of a community are presented in the June report of the Management Information Service.* titled, *Administration of a Municipal Street Tree Program.*

Noting that street trees help to reduce traffic noises, deflect glare and heat, cut down wind velocities, and purify the air by trapping dust, the report cites eight cities that spend about $100,000 a year or more on their local street-tree program. Detroit was particularly notable, with an expenditure in 1953 of $1,000,000.

The essential ingredients of a good street-tree program are listed as including: (1) development of a master street-tree plan; (2) adoption of a street-tree ordinance; (3) designation of a municipal department, or private tree-service concern to carry out the work called for by the tree plan; (4) development of an effective means of financing the tree program, and (5) selection of properly trained personnel to carry out the program.

Also mentioned is the importance of requiring street trees to be planted by subdividers along roads in new residential subdivisions.

Although three types of tree programs are discussed, each involving different degrees of municipal responsibility, the report notes that professional city foresters recommend programs in which a city or town takes full responsibility for the care and control of street trees.

William B. Love, a specialist in municipal forestry and parks is quoted as follows: "The ideal street-tree program should be set up with the idea in mind that the city will plant, remove, and care for street trees without special assessment against the abutting property. All regulations and work on street trees should be based on the right of the municipality to control the street for purposes of travel and safety."

* Information concerning subscriptions to the Management Information Service should be addressed to the International City Managers' Association, 1313 E. 60th St., Chicago 37, Ill.

Baltimore C. P. H. A. Honors Its President

AT ITS annual dinner meeting on June 1, the Baltimore Citizens Planning and Housing Association honored Hans Froelicher, Jr., on the anniversary of his 10th year as President of the Association. Distinguished guests joined the Association membership in praising Mr. Froelicher's contributions to planning and housing improvements in Baltimore. The guests included Theodore R. McKeldin, Governor of Maryland; Lee F. Johnson, Executive Vice-President of the National Housing Conference; Richard L. Steiner, Deputy Administrator, Division of Slum Clearance and Urban Redevelopment, Housing and Home Finance Agency; and Simon E. Sobeloff, Solicitor General of the United States.

In his own remarks to the meeting, Mr. Froelicher expressed particular gratitude to the 2,000 members of the Association who have volunteered time and effort for neighborhood rehabilitation and elimination of slum housing. The work of these citizens is paying off, Mr. Froelicher said, as he spoke of the 200 city blocks of blighted homes that have been improved under the Baltimore Plan.

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From Alaska to Zamboanga and points North, East, South and West, wherever man has a need for water—there you will find Layne.

It's a typical American success story—this history that spans nearly three quarters of a century and started with a one man muscle power drilling rig—and an idea.

Today Layne is the name of a product—but it's more than that—much more. The name Layne is also the name of a service, international in scope, that includes every phase of ground water development from preliminary exploration to maintenance of installed equipment.

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For information on any phase of ground water development, modernization, maintenance or equipment consult your nearest Layne Associate Company—or write

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To obtain any of the following catalogs, write directly to the manufacturers. If you prefer, you may circle the identifying numbers on this coupon and mail to THE AMERICAN CITY, *470 Fourth Avenue, New York 16, New York, or use the colored Post Card at page 226.* 8/54

133	139	145	151	157	163	169	175	181	187	193
134	140	146	152	158	164	170	176	182	188	194
135	141	147	153	159	165	171	177	183	189	195
136	142	148	154	160	166	172	178	184	190	196
137	143	149	155	161	167	173	179	185	191	197
138	144	150	156	162	168	174	180	186	192	198

Name ..... **Position** .....

Address .....

Speeds Municipal Figuring

133 The Friden calculator reduces municipal auditing procedures to a minimum of time—handles computations from simple arithmetic to multiple correlation for water, light and tax departments—and produces statistical figures on personnel, crime and budget for the police department. It cuts calculating time in half, increasing efficiency and saving tax dollars. A full description of the new calculator may be obtained from the FRIDEN CALCULATING MACHINE CO., INC., SAN LEANDRO, CALIF.

Stops Rust

134 Protect water and sewage plant equipment, water tanks, and other metal surfaces with Rustarmor, a new rust-stopping paint made by INERTOL CO., INC., 485 FRELINGHUYSEN AVE., NEWARK, N. J. Rustarmor is easily applied to good metal, somewhat rusted, without sandblasting. It is hygroscopically controlled, never gets sticky, and is made in 11 colors.

Wrought Iron in Sewage Treatment Plants Resists Corrosion

135 Engineers of the Port Huron (Mich.) Sewage Treatment Plant specified wrought iron for the plant's digester coils, gas lines, engine exhaust lines, steam supply and condensate lines. This long-wearing metal guards against corrosion and prevents premature pipeline failure. Its advantages are detailed in case study *No. 101*, a description of the Port Huron Plant, available from the A. M. BYERS CO., PITTSBURGH, PA.

Simplifies Overhead Maintenance Jobs

136 Repairing street lamps, tree spraying, and various construction and maintenance jobs that depend on getting men and equipment to high or out-of-reach places, are easier with the Hi-Ranger. A self-leveling workman's platform is mounted at the end of a double-jointed boom which, in turn, is mounted on any standard truck. The booms are easy to operate and are powered solely by the truck engine. Write MOBILE AERIAL TOWERS, INC., 1405 N. CLINTON ST., FORT WAYNE, IND.

Better Street Lighting

137 How modern street illumination will benefit your city is fully explained in a new booklet from the MILLERBERND MFG. CO., WINSTED, MINN. Five "advance-design" Octa-Tubes are described for re-lighting streets, bridges, highways, and parking facilities. Each standard is cold rolled of corrosion-resistant steel, and each is simple and economical to install. Write for *Bulletin OTA*.

Eliminate Leaf Raking

138 Solve seasonal leaf problems with this new power leaf mill introduced by THE TURBO-JET MFG. CO., 22 BOWMAN TERRACE, CINCINNATI 29, OHIO. The Turbo Jet gets leaves from hard-to-reach places and pulverizes them into a valuable mulch. It is easy to operate and eliminates raking and hauling operations. A new folder describing this lightweight, economical unit is available on request.

Sewer Cleaning Equipment

139 *Catalog 10* gives the complete story of Turco Maxi-Power sewer cleaning equipment. In addition, it supplies you with complete specifications for each device, and recommended procedure for cleaning sewers. Maxi-Power machines may be obtained with a variety of accessories for cleaning sewers from 6- to 24 inches. Your free copy of Catalog 10, is available from the TURBINE SEWER MACHINE CO., DIV. OF CHAS. H. STEHLING CO., 1303 N. FOURTH ST., MILWAUKEE 12, WIS.

Emergency Electric Plants

140 A new booklet describes over 200 models of air-cooled and water-cooled gas and gasoline powered electric plants, ranging from 300 to 5,500 watts. General data are given on a complete line of light and power equipment. Detailed specifications guide the selection of the proper type, size and starting methods, and the normal watt requirements of conventional appliances and motors. For your copy, address the UNITED STATES MOTORS CORP., 353 NEBRASKA ST., OSHKOSH, WIS.

A High-Speed Combination Street Sweeper

141 The Mobil-Sweeper, with its proven record of performance, gives you a street-sweeping combination that is bound to boost your efficiency. It gives you the finest in street sweeping performance—dirt, bottles, cans and other trash are swept into the path of a full-floating pick-up broom and deposited into the big storage hopper. By building this on a truck chassis, it permits easy, flexible operation on streets, high-speed running time to a dumping point, and simple maintenance. Write MOBIL-SWEEPER, DIV. of THE CONVEYOR CO., AC-01, 8620 E. SLAUSON AVE., LOS ANGELES 58, CALIF.

Cheaper Municipal Power

142 Worthington engines can increase your plant's efficiency and lower its operating costs. For money-saving facts on dual fuel and other engines, gas or diesel, write for bulletins to WORTHINGTON CORP., ENGINE DIV., SECTION E. 3. 10, BUFFALO, N. Y.

Improved Treatment of Water, and Sewage Wastes

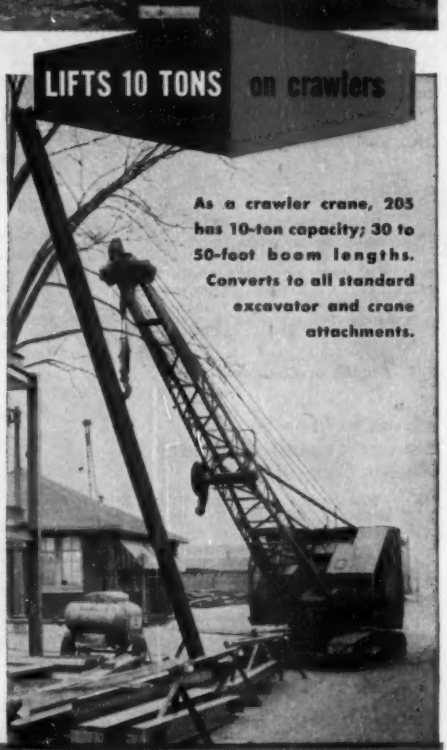
143 Equipment for the economical treatment of water, sewage and trade waste is offered by HARDINGE CO., INC., 240 ARCH ST., YORK, PA. Included in the company's line are thickeners, flocculating units, circular clarifiers, digesters, and automatic backwash sand filters. Also rectangular clarifiers and hydro-classifiers. Catalog and flow sheet on request.

Two-Way Radio Will Help All Municipal Departments

144 Don't restrict the benefits of 2-way radio to police departments only. Put them in all of your city's cars and trucks, and give your administrators instant command of all operations—even in remote locations. Literature discussing low-cost, dependable radio communication equipment, may be obtained from MOTOROLA COMMUNICATIONS & ELECTRONICS, INC., 4501 W. AUGUSTA, CHICAGO 51, ILL.

(Please turn to page 25 for more Bulletins)

NEW Koehring 205 Truck Crane gives you lowest price per pound of lifting capacity. Its maximum 15-ton lift (on 25-ft. boom) offers a big *plus* in work capacity over other machines in the "½-yard" class. Remember, lift capacity is WORK CAPACITY. The 205's extra lift capacity increases its work capacity with all attachments. As a clamshell or dragline, it handles ½ to ¾-yard buckets on a wide work range. As a heavy-duty ½-yard shovel or hoe, its extra strength and powerful cable crowd increase production and speed of operation.


LIFTS 10 TONS on crawlers
As a crawler crane, 205 has 10-ton capacity; 30 to 50-foot boom lengths. Converts to all standard excavator and crane attachments.

CHECK THESE OTHER 205 ADVANTAGES:

- 32½ m.p.h. travel speeds on rubber-tired truck mounting.
- Only 2 major shafts in upper machinery — simple, accessible.
- Big 20-inch clutches, self-adjusting.
- 4 hook-rollers, eccentric adjustment.
- Antifriction power flow for dig, lift, swing, and travel.
- On standard or extra-long crawlers, 16, 20, or 24-inch shoes.
- Automatic crawler traction-brakes.
- Independent traction optional.

K434 AC

Get the complete story in new 205 bulletin. Ask your Koehring distributor for your copy . . . or write us.

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Which Catalogs Interest You?

Write directly to the manufacturers or use the coupon on page 23

Street Lighting Standards

145 Steel street lighting poles conforming to I.E.S. requirements are offered in various designs and heights to 30 feet and more, for anchor-bolt setting or with steel or cast-iron transformer base. They are for single or twin-light installation on mast-arms 4 to 15 feet. A new catalog gives specifications for these standards and also for special standards for parkways, traffic signals and area lighting, as well as fittings for modifications. For your copy, write KERRIGAN IRON WORKS, INC., NASHVILLE, TENN.

Cast-Iron Water Pipe in Small Diameters

146 Mechanical joint pipe with an inside diameter of 2¼ inches is now being centrifugally cast by this company. The new small-diameter water pipe has all of the characteristics of Super-DeLavaud larger size pipe, and is available in 18-foot lengths. It has a smooth, straight barrel and an even cross section, and is easy to tap or cut. For complete information, write McWANE CAST IRON PIPE CO., BIRMINGHAM, ALA., or PACIFIC STATES CAST IRON PIPE CO., PROVO, UTAH.

New Crawler and Truck-Mounted Shovels

147 Specification bulletins on two new shovel attachments are offered by the SCHIELD BANTAM CO., 234 PARK ST., WAVERLY, IOWA. *Bulletin No. TSH-301* describes and illustrates the truck-mounted shovel, with typical applications for the Model T-35 ⅝-yard, 6-ton truck-mounted Bantam. *Bulletin No. CSH-301* contains similar information on the Schield Bantam Model C-35 ⅝-yard crawler-mounted shovel crane. Copies on request.

Plug Valves for Water, Sewage Lines

148 These lubricated plug valves are made in full-port and venturi types, in sizes to 14 inches, with either self-sealed 2-piece plug or 1-piece plug design. They are discussed in a new 24-page reference book, *No. 39-5*, from the HOMESTEAD VALVE MFG. CO., CORAOPOLIS, PA.

Installs Pipe Underground Without Stopping Traffic

149 Why interrupt traffic to install pipe and conduit under busy streets? An auger-type road boring machine installs casing from 3- to 34 inches as the boring progresses, avoiding cave-ins and assuring accurate alignment. Write the M. J. CROSE MFG. CO., INC., 2715 DAWSON RD., TULSA, OKLA.

Parking Meters Meet Changing Traffic Needs

150 To meet your city's changing traffic needs, Dual automatic parking meters can be converted to any practical coin and time setting schedule without adding any parts. Single Dual and Dubi Dual units are available for on-street and off-street parking. Write THE DUAL PARKING METER CO., CANTON 2, OHIO.

Water Pipe Couplings

151 It costs less to install and maintain water pipe when the lines are sealed with AllSteel couplings. Made in 24- to 96-inch sizes, AllSteel couplings seal the line "bottle-tight," yet allow for expansion, contraction, and misalignment. Immediate shipment is assured. Write R. H. BAKER & CO. INC., 2070 E. SLAUSON AVE., HUNTINGTON PARK, CALIF.

City Trucks Can Load Themselves

152 Attached to any 2-ton dump truck, the new LoDal converts the truck into a unit that can "load itself"—as well as haul the load and dump it. This hydraulic truck self-loader, plus LoDal attachments, will dig, load, carry, grade, backfill, sweep, plow, and remove snow. It performs these operations quickly and economically using one man and one machine. Write LODAL, INC., NORWAY, MICH.

New Spray Gun Improves Line Marking

153 The KELLY-CRESWELL CO., XENIA, OHIO, has developed an automatic spray gun for marking traffic lines that assures a uniform film thickness, an accurate pattern, and longer production runs. The diaphragm-operated unit eliminates the need for an air cylinder and upper packing gland. It operates quickly and continuously, requiring minimum cleaning and maintenance.

Rubber-Asphalt Pavement

154 Used extensively in test roads throughout the United States and Canada, Mealorub, a rubber-asphalt additive, is designed to add years to street and road life. It contains from 90 to 95% of pure natural rubber, and is available for immediate delivery. Write JACOBUS F. FRANK, 120 WALL ST., NEW YORK 5, N. Y.

Microfilm Your City's Records

155 Microfilm record copies not only cost less to make than carbons, they are easier to file as well, saving up to 99% in filing space. Cities can use Recordak microfilming equipment to eliminate everyday manual transcription, for a photographic record of important documents, checks, and punched card reports, and to speed reference work. A complete description of Recordak microfilming and its application to municipal routines, is available from the RECORDAK CORP., 444 MADISON AVE., NEW YORK 22, N. Y.

Construction Facts About Street-Name Signs

156 Deciding on the type of street-name signs to install will be a lot easier if you examine this report, which discusses sign construction, size and color, type of letters, reflectorization, sign frames, posts and fixtures. For a free copy, write MUNICIPAL STREET SIGN CO., INC., 777 MEEKER AVE., BROOKLYN, N. Y.

Permits Dictating and Recording in Autos

157 New literature from the AMERICAN TELEVISION & RADIO CO., ST. PAUL 1, MINN., tells the city official how he can transform his car into a "rolling office." An ATR tape recorder inverter, operating from a 6- to 12-volt DC automotive storage battery system, provides 110 volts AC. This AC current may be used for operating a tape or wire recorder in your automobile, and is useful for emergency lighting and power applications.

Economical Air Compressor

158 A small air compressor, powered by a heavy-duty Chrysler engine, is an asset on all of your street construction jobs. Operating without coupling or clutch, the Model 120-P compressor features a finned after cooler which reduces air temperature and increases hose life. The unit is made by GORDON SMITH & CO., INC., 425 COLLEGE ST., BOWLING GREEN, KY.

Floor Grating for Water, Sewage Plants

159 Municipalities are offered safe, low-cost gratings for the floors of water, sewage and power plants, and for walkways, catwalks and stairways. Irving gratings are lightweight and easy to install. They are described in an illustrated catalog from IRVING SUBWAY GRATING CO., INC., at 5056 27th ST., LONG ISLAND CITY 1, N. Y., or 1856 10th ST., OAKLAND 20, CALIF.

Efficient Tandem Roller

160 Put the finishing touches on your blacktop pavement jobs with a Huber tandem roller, designed to handle miles of pavement on schedule. The unit has sufficient capacity to keep two asphalt machines busy. It features a guide role assembly that won't "scuff," and extremely close curb clearance. Get *Bulletin T-152* from the HUBER MFG. CO., MARION, OHIO.

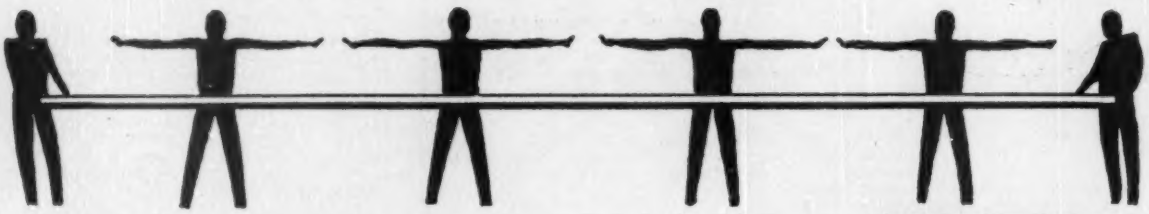
Speeds Leaf Removal

161 Towed behind a dump truck, the Gledhill-Elliotte leaf loader "sucks up" leaves, twigs, and other curb accumulated refuse quickly and efficiently. A powerful motor drives the suction apparatus, and the leaves are delivered to the truck through a large, flexible tube. For full information and prices, write THE GLEDHILL ROAD MACHINERY CO., GALION, OHIO.

Drafting Lettering Machine

162 A quick, simple and economical way to letter specifications on tracings and drawings is to use a Vari-Typer lettering machine. The unit is easily operated by an office typist and produces clear, distinct letters and figures. Type sizes range from 6- to 18 points in a variety of styles, and are instantly changeable. Write the RALPH C. COXHEAD CORP., 720 FRELINGHUYSEN AVE., NEWARK 5, N. J., requesting *Vari-Typer Book E-4.*

(Please turn to page 27 for more Bulletins)

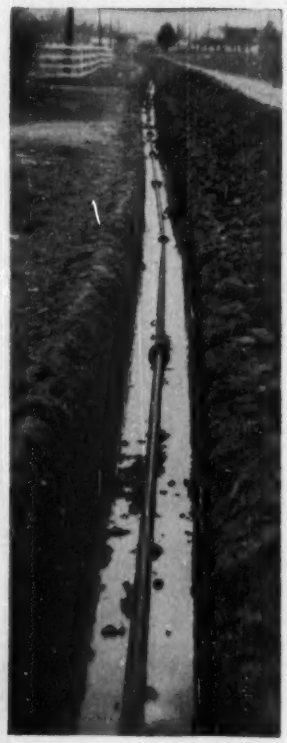


Boltite Mechanical Joint

McWane 2¼" Cast Iron Pipe has been taken into the DeLavaud Centrifugal family. Mechanical Joint pipe 2¼" in diameter is now being cast centrifugally by McWane. After extensive research and experiments, we have recently completed construction of the only centrifugal small-pipe foundry in the United States producing Mechanical Joint Super-DeLavaud 2¼" Cast Iron Pipe in EIGHTEEN-FOOT lengths.

McWane-Pacific small diameter pipe has all the characteristics of Super-DeLavaud larger size pipe—smooth straight barrel, even cross section, sound metal free of blow-holes or casting defects, easy to tap or cut.

DeLavaud centrifugal casting of pipe in 4" sizes and up has been in successful operation for over 25 years. McWane's new Super-DeLavaud small pipe foundry probably is the most important development in the pipe industry since the invention of centrifugal casting.



McWane-Pacific 2¼" Cast Iron Pipe in 18-foot lengths is furnished with Mechanical joint and with complete line of fittings. Later, it will be made with bell-and-spigot joints and also in 2-inch diameter. The 2¼" size weighs approximately 6.8 lbs. per foot. It is easily handled and laid by two men. It is furnished uncoated, coated or cement lined. For complete information, wire or write McWANE CAST IRON PIPE COMPANY, Birmingham, Alabama, or PACIFIC STATES CAST IRON PIPE COMPANY, Provo, Utah. (Sales Offices in principal cities.)

McWANE PACIFIC PIPE *Lasts for Centuries*

Obtain this Literature Free of Charge!

Write directly to the manufacturers or use the coupon on page 23

Crawler Tractors, Scrapers and Bulldozers

163 Information on International crawler tractors, scrapers, cable-controlled bulldozers, bullgraders and angle dozers are contained in a new 48-page catalog from the Consumer Relations Dept., INTERNATIONAL HARVESTER CO., CHICAGO 1, ILL. Descriptions of some 73 International Industrial Power products are included, complete with easy-to-understand technical data and detailed illustrations.

Street-Lighting Poles, Brackets and Accessories

164 Carco steel light poles, brackets and accessories effectively resist adverse weather conditions and are designed to meet all of the requirements of the I.E.S. street-lighting code. The octagonal pole tubes are fabricated of 11 gauge, hot-rolled carbon steel; the brackets are 2-inch standard pipe, tangent-mounted to the pole tubes; and the pole components and optional accessories are interchangeable. Write the PACIFIC CAR AND FOUNDRY CO., RENTON, WASH.

New Filter Control for Water Treatment

165 A system of semi-automatic sequence operation for backwashing rapid sand filters is announced by BUILDERS - PROVIDENCE, INC., PROVIDENCE, R. I. Called Auto Central filter control, it assures accurate backwashing rates and duration to maintain maximum filter efficiency. Moreover, it saves time, cuts costs, and relieves plant personnel for other duties. Request *Bulletin No. 480-L1.*

Electric Cooler Fountains

166 Provide municipal plants and offices with clean, cool drinking water by installing a Halsey Taylor electric cooler fountain. Many of these fountains are ideal for police photographic work; others are available for 115-volt, 60-cycle AC single phase current; and some feature special compartments for ice cubes and beverages. Write THE HALSEY W. TAYLOR CO., WARREN, OHIO.

Metering Pumps for Water, Sewage Treatment

167 An interesting discussion of "K" type hydraulic drive metering and proportioning pumps for water and sewage treatment plants, is contained in Bulletin *KP-54.* The "K" type pump is offered in two models with maximum capacities ranging from 13 to 730 gph per feed. It provides continuous and accurate metering and proportioning of virtually any fluid. Write the HILLS-McCANNA CO., 3025 N. WESTERN AVE., CHICAGO 18, ILL.

Pint-Sized Ditcher, Full-Sized Ditch

168 The little city can get a big-time answer to ditching problems in its water and sewer departments, if it puts the Model E Ditch Witch trencher to work. Despite its compact size, it will scoop out a trench as wide as 12 inches and as deep as 45 inches. It can also be supplied with cable-laying equipment if desired. *Catalog E-154* gives the full story. Write THE CHARLES MACHINE WORKS, 625-30 BIRCH ST., PERRY, OKLA.

Traffic Barriers Keep Cars in Line

169 The HAWKINS-HAWKINS CO. suggests the use of "Safeti-Bars" rather than painted lines to channel and protect vehicular and pedestrian traffic. Drivers respect these clearly visible, jagged-locking raised barriers, and the units keep cars and trucks in their proper lanes. The "Safeti-Bar" is easy to install, and may be obtained with a special reflective coating. For an illustrated folder, address the company, at 1255 EASTSHORE HIGHWAY, BERKELEY, CALIF.

New Loader Does More Work

170 The Adams TraveLoader, reports Dominic De Meo, Superintendent of Streets, Canton, Ohio, does almost twice the work of ordinary loaders, loading from both windrows and stockpiles. Aside from regular loading duties, it may be used for snow removal and in loading abrasives for ice control. A detailed description of the TraveLoader is available from the J. D. ADAMS MFG. CO., INDIANAPOLIS, IND.

Asphalt Distributor

171 The operator who heats and applies asphalt, tar, or emulsion to city streets with a South Bend distributor, has full control of the unit at all times. Spray widths ranging from 2 to 24 feet accommodate any street, and the lateral movement of the spray bar permits irregular areas to be covered quickly. A swing-up section and 10-inch hydraulic lift facilitate safe, speedy travel. Write the MUNICIPAL SUPPLY CO., 250 S. MAIN ST., SOUTH BEND 23, IND.

Traffic Line Markers

172 Small municipalities are offered the Reflecto-Liner, Jr., a fast-working, highly maneuverable, hand-propelled striper for marking traffic lines on streets, aisles, and parking areas. Inexpensive to operate and maintain, the unit will lay 2- to 4-inch lines of plain or reflective paints. It is made by WALD INDUSTRIES, INC., HUNTINGTON, PA. Write for *Catalog W-10.*

Playground Equipment

173 A special catalog and the new booklet, *Planning Your Playground,* from THE J. E. BURKE PLAYGROUND EQUIPMENT CO., discuss the company's full line of playground equipment designed for safe, long-lasting operation. Also available are a price list and complete specifications. Address the company at FOND DU LAC, WIS.

Locates Underground Valves Quickly and Accurately

174 An improved valve box locator features "pinpoint" accuracy in locating underground valves. The unit is designed to work faster with a minimum of needle-spinning action. It is made by the AQUA SURVEY & INSTRUMENT CO., DEPT. AC, 2518 LESLIE AVE., CINCINNATI 12, OHIO.

Calcium Chloride Protects Unpaved Streets

175 In simple, non-technical language, the new booklet, *The Calcium Chloride Road,* describes how gravel, crushed stone and similar types of road can be converted and maintained as smooth, dust-free riding surfaces. Street and road officials may obtain free copies of the booklet by writing the ADVERTISING & SALES PROMOTION DEPT., SOLVAY PROCESS DIV., ALLIED CHEMICAL & DYE CORP., 61 BROADWAY, NEW YORK 6, N. Y.

Street Cleanup is Easy With Shoveloaders

176 Street departments which once employed 12 men with hand shovels to keep four trucks loaded with debris and refuse during spring cleanup, can now use one man on a Shoveloader to do the job. The Shoveloader, officials report, loads quickly and efficiently, at big savings to the city. In summer, it picks up and loads sweeper piles; in autumn, it picks up leaves; and in winter, the unit may be used for snow removal. THE BAKER-LULL CORP., 358 W. 90th ST., MINNEAPOLIS 20, MINN., will send literature.

Dependable Emergency Power

177 Your city can get portable and standby electric plants, AC and DC, ranging from 500 to 50,000 watts, from the KATOLIGHT CORP., BOX 491-25, MANKATO, MINN. These lightweight, compact power plants are designed for dependable, low-cost operation and minimum maintenance. The plants start automatically when the normal supply of electricity is disrupted; stop automatically when the normal supply is restored. Details on request.

Rotary Plow Clears Snow from Sidewalks

178 Here is a small sidewalk plow that removes snow easily, whether it is heavy, wet, chunky and sticky, or light and fluffy. The Model SA-20 Sno-Flyr rotary plow clears some 600 pounds of snow per minute; the Model SA-26, about 1,200 pounds per minute. Each unit is powered by a Kohler engine, and both feature adjustable running shoes, a revolving type casting chute, and pneumatic tires. Write the WM. BROS. BOILER & MFG. CO., SNO-FLYR DIV., MINNEAPOLIS 14, MINN.

Kills Roots in Sewers

179 One of the major causes of sewer obstruction, according to the RELIANCE CHEMICALS CORP., is the penetration of tree and shrub roots into sewer systems. A good way to restore sewage flow without damaging the trees and shrubs is to use Rootox, a compounded bolet containing copper sulfate with selected wetting and dispersal agents. Rootox paralyzes the drinking mechanism of the root tips, resulting in a local killing action. For informative data on root control, address the company at P. O. BOX 6724, HOUSTON 5, TEXAS.

(Please turn to page 28 for more Bulletins)

Easily reaches top of 90-foot trees. Perfect for parks, golf courses, playgrounds, swimming pools, tourist courts, picnic grounds, etc.

PROTECT trees, shrubs and grass with
IRON AGE MIST SPRAYER

Users everywhere are praising the performance of Oliver Iron Age Mist Sprayers wherever insects and disease are a problem. For here's the greatest sprayer ever developed for effective, low cost pest control.

Just look at the outstanding features of this Oliver Iron Age Model 125. Rugged 22 hp, 4-cylinder Wisconsin engine drives sturdy cast aluminum axial flow fan at 87% efficiency, delivering 6,000 to 11,000 cubic feet of air per minute at 90 to 125 mph. Choice of Hypro 750 Pump for most solutions or, on model 125 EAP, a 5-gallon pump with mechanical agitation for wettable powders and abrasive liquids. Efficient spray jets meter *exactly* the right amount of mix, either oil or water, to center of high velocity air stream, insuring complete misting of concentrate. Spray jets can be changed quickly to alter droplet size. Turret size. Turret rotates 360° for full control of air blast.

Find out how Iron Age Mist Sprayers can make your shade tree preservation program *far more effective at less cost*. Mail coupon below for complete information.

IRON AGE MIST SPRAYERS give you these advantages:

- Greater community health and comfort
- Superior control of tree diseases, flies and mosquitoes
- More efficient use of power, materials, labor and equipment

OLIVER
IRON AGE
Finest in Farm Machinery

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THE OLIVER CORPORATION, Dept. 36, 400 W. Madison St., Chicago 6, Illinois AC-2

Gentlemen: Please send me information on Iron Age Mist Sprayers.

Name.....

Title.....

Address.....

City..... State.....

Catalogs for You

Write directly to the manufacturer or use coupon on page 23

Drys Fire Hose Quickly

180 An electrically-operated hose dryer which circulates prewarmed fresh air through coiled wet fire hose at the rate of five to six air changes each minute is offered by THE CIRCUL-AIR CORP., 575 E. MILWAUKEE, DETROIT 2, MICH. The Circul-Air dryer is easy and economical to operate. It lengthens hose life, and improves the appearance of fire houses.

For Water Treatment Plants

181 Pneumatic Operated Control is the new, fool-proof way to measure and control liquids in water treatment plants. You can use the P.O.C. System for pH measurement and control, chemical feed proportioning, and flow blending (ratio control). It is fully described in *Bulletin No. 5421* from the GENERAL FILTER CO., AMES, IOWA.

Big Savings with Voting Machines

182 Using the old paper ballot system, Ypsilanti, Mich., cast 5,328 votes at an average cost per vote of 28.4 cents. Using automatic voting machines, the City cast 5,418 votes, at an average cost per vote of 13.2 cents. The machines also saved Ypsilanti $1,400 in labor and printing bills. For similar savings in your community, write the AUTOMATIC VOTING MACHINE CORP., JAMESTOWN 55, N. Y.

Efficient Sludge Disposal For Cities Large and Small

183 Three C-E Raymond Flash Drying systems operating in a new sludge drying plant in Baltimore, Md., dry digested filtered sludge to produce high quality fertilizer at the rate of 15,000 to 27,000 tons a year. These same systems may be used in communities with populations as low at 6,000. For an effective solution to your sludge disposal problems, write COMBUSTION ENGINEERING, INC., RAYMOND DIV., 1315 N. BRANCH ST., CHICAGO 22, ILL.

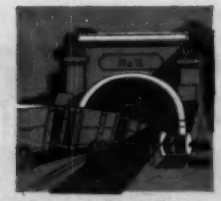
Speeds Airport Traffic

184 Taxi guidance signs that show the pilot his location at each intersection and tell him exactly how to reach his destination, are made by the CROUSE-HINDS CO., SYRACUSE 1, N. Y. This new system of taxiway guidance relieves the tower operator of most of the work of directing ground traffic. The sign numbers are of orange-yellow plastic on a black background, and are clearly legible around-the-clock. Write for details.

Water-Works Valves

185 Recent developments in gate valves, square bottom valves, check and air release valves and hydrants, are described and illustrated in *Bulletin No. M-2* from the RENSSELAER VALVE CO., TROY, N. Y. The bulletin includes descriptions of such valve accessories as gearing combinations, by-passes, and electric, air, and cylinder operation, and discusses "O" Ring Seals, Ring Tite, and mechanical joints as applied to valves and hydrants.

(See page 30 for more Bulletins)

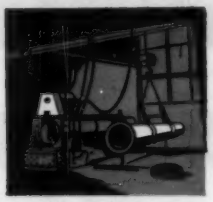


Ore and Coal Mines

Coke Ovens

our integrated operation means undivided control of quality

Blast Furnaces



Pipe Plants

U.S. cast iron PIPE

FOR WATER, GAS, SEWERAGE AND INDUSTRIAL SERVICE

We are a wholly integrated pipe-producing unit — with mines, quarries, blast furnaces and laboratories under one direction and control.

What does this mean to you, a pipe buyer? It means that we are in the best possible position to take *complete* and undivided responsibility for the quality of our product . . . from raw materials to finished pipe.

In addition to being able to control the quality of pipe-making raw materials at their sources, our Quality Control of pipe production gives further assurance to customers that the quality level of U. S. Cast Iron Pipe is in excess of standard specifications. Our pipe is produced to *our own* quality control specifications, more exacting than the established specifications under which cast iron pipe is normally purchased.

U. S. PIPE & FOUNDRY COMPANY

GENERAL OFFICES: BIRMINGHAM 2, ALABAMA

A wholly integrated producer . . . from mines and blast furnaces to finished pipe.

For adequate protection...

you need CYCLONE FENCE!

• Children play with and learn to love animal pets at this charming children's zoo. Here the children go right inside and feed the animals and watch them to their hearts' content. Cyclone Fence is tops for this type of installation because it is strong enough to withstand severe shoving, yet at the same time affords spectators a clear view of the exhibits through its wide open-mesh fabric.

You can buy cheaper fence than Cyclone, but it will cost you more per year. Cyclone gives full value for your dollar. Nothing but brand-new, top-quality material is used throughout. Posts and top rails are heavy and rigid. Gates won't drag. The chain link fabric is woven from heavy steel wire and galvanized after weaving for greatest resistance to rust and corrosion. And Cyclone is erected by full-time, Cyclone-trained experts. Our engineers, located in principal cities, will gladly supply you with data, and advice on your particular fencing job.

NO JOB IS TOO LARGE—NO JOB IS TOO SMALL FOR CYCLONE*

CYCLONE FENCE DEPARTMENT, AMERICAN STEEL & WIRE DIVISION
UNITED STATES STEEL CORPORATION
WAUKEGAN, ILLINOIS • SALES OFFICES COAST TO COAST
UNITED STATES STEEL EXPORT COMPANY, NEW YORK

USS

*Cyclone is the trade-mark name of fence made only by Cyclone. Accept no substitute.

USS CYCLONE FENCE

UNITED STATES STEEL

More Literature

Write directly to the manufacturer or use coupon on page 23

Easy-to-Install Pipe For Water, Sewage

186 All you need to install American Double-X mechanical joint pipe is a brush, a bucket of soapy water, and a ratchet wrench. The pipe is made to required wall thicknesses in 2- through 48-inch diameters, and will carry sewage, water, gas, and salt brine. It is made by the AMERICAN CAST IRON PIPE CO., BIRMINGHAM 2, ALA. A free copy of the new booklet, *American Double-X Mechanical Joint Pipe*, will be sent on request.

Police and Fire Department Badges

187 A new catalog available without charge from the 75-year-old Braxmar Co., describes and illustrates a variety of standard badges for use by police, fire and other city and county officials. For your copy, write C. G. BRAXMAR CO., INC., 216 E. 45th ST., NEW YORK 17, N. Y.

Instruments for The Sewage Plant

188 A factual presentation that gives you the latest in good instrumentation practice at the sewage-treatment plant is yours, if you send a request to GENERAL LABORATORY SUPPLY CO., P. O. BOX 2706, PATERSON, N. J. It was prepared by Edward R. Grich, instructor in Sanitary Chemistry, Manhattan College, New York City, and deals with pH, the ORP potential, various phases of photometric analysis and polarography.

Coin-Handling Equipment

189 Coin sorters, counters, and changers have long been used by a number of municipal departments, but the almost universal use of parking meters has made the traffic department one of the largest users. New catalogs have just been prepared describing numerous sizes and types of coin-handling machines and accessory equipment including coin trays, bags and wrappers, stackers, and money trucks. Write ABBOTT COIN COUNTER CO., INC., 143 ST. & WALES AVE., NEW YORK 54, N. Y.

Emergency Wire Cutter

190 A quick, safe way to cut wire in time of emergency, is to use the new No. 1BC wire cutter made by the BARTLETT MFG. CO., 3003 E. GRAND BLVD., BOX 30, DETROIT 2, MICH. Easily operated from the ground without the use of a ladder, this handy tool cuts 110 and 220 RC wire. It will also cut hot 4,800 volt primary and service wire found hanging close to the ground. A laminated sitka spruce pole is furnished in two 6-foot lengths to be used as either a 6- or a 12-foot pole.

Water-Works Pumps

191 Enlarge your file of pump data by getting a set of bulletins from the PENNSYLVANIA PUMP & COMPRESSOR CO., EASTON, PA. They will provide you with complete details on the company's horizontal-shaft, centrifugal pumps, in either single or multi-stage design, operating against a wide range of heads.

(See page 32 for more Bulletins)

now—

a 4-WHEEL DRIVE Excavator-Loader with *plus* features for *plus* performance

TRACTOMOTIVE TL-12 TRACTO LOADER

4-WHEEL DRIVE for excellent traction — excavating or loading — even under adverse ground conditions . . .

PLUS HYDRAULIC TORQUE CONVERTER DRIVE for smoother, faster operation. No ramming or clutching, no engine stalling . . . easier maneuvering, snappy bucket action!

PLUS CLUTCH-TYPE TRANSMISSION Eliminates most shifting. Operator simply pushes a lever to go forward, pulls it back for reverse. He can work all day without shifting gears on short-haul jobs!

PLUS REAR-WHEEL POWER STEERING This advantage together with all-wheel drive means easy steering and maneuvering under all operating conditions.

PLUS NEW, DYNAMIC ALLIS-CHALMERS POWER-CRATER ENGINE Gives you high-octane performance on regular gasoline.

• • •

Yes, here's 4-wheel drive PLUS . . . PLUS all the advantages Tractomotive offers you in its famous TL-10 Tracto-Loader — the outstanding performer on bulk material handling. Choose the model that fits your needs.

Wire, write or call for a demonstration NOW!

POWER-CRATER is an Allis-Chalmers trademark

Weight: 12,000 lb.
Bucket Capacity: 1 cu. yd.
Speeds — 4 forward, to 20 mph . . . 4 reverse, to 25 mph
Brake Hp. — 63

MODEL TL-10 for all types of bulk material handling . . . with short, 11-ft. turning radius, torque converter drive, clutch-type transmission and Allis-Chalmers POWER-CRATER engine. ¾ cu. yd. bucket, weight 11,400 lb., 63 brake hp.

See your nearest Allis-Chalmers Industrial Tractor Dealer

TRACTOMOTIVE

TRACTOMOTIVE CORPORATION, DEERFIELD, ILLINOIS

Tracto-Loaders • Tracto-Shovels, Side Booms and Hydraulic Rippers for Allis-Chalmers Crawler Tractors • Loader and Shoulder Maintainer for Allis-Chalmers "D" Motor Grader

Digs Through Sticky Gumbo and Buried Stumps for 8 Sewer Laterals in 6 Hours with a Sherman Power Digger

"Do it fast." That was the order given to a large general contractor in New Orleans. Their job was to dig eight trenches, each 18 ft. long, 1½ ft. wide, and sloping from 3 ft. at one end to 7 ft. at the other. Soil? Sticky gumbo with 16 buried stumps.

Despite these conditions, a Sherman Power Digger completed the work in six hours!

This is a typical, everyday job for the Sherman. It is used for curb removal, catch basins and trenches of all kinds—electric conduits, water mains, pipe lines and so on. It is compact and easily maneuvered for close-quarter work. Light weight prevents property damage on sidewalks or close to buildings. Because it is tractor mounted, the Sherman moves quickly from job to job, often completing several projects miles apart in one day.

The Sherman Power Digger releases heavier equipment for big jobs, digs in a fraction of the time and cost of manual labor, goes up to 10 ft. below grade in mud, hardpan, shale, oiled roads, blacktop and stony ground. Initial cost is surprisingly low . . . maintenance, simple and inexpensive. Get the whole story in Bulletin D55—today.

Designed, Engineered and Manufactured Jointly by
SHERMAN PRODUCTS, Inc.
Royal Oak, Michigan
WAIN-ROY CORPORATION
Hubbardston, Mass.

Patent No. 2,303,852
Other patents pending

© SHERMAN PRODUCTS, INC., 1954

Sherman
PRODUCTS, INC.
ROYAL OAK, MICHIGAN

Catalogs for You

Write directly to the manufacturer or use coupon on page 23

Measures and Controls Water and Sewage Flows

192 Accurate, dependable equipment for measuring liquids and gases in water and sewage-treatment plants is manufactured by the SIMPLEX VALVE & METER CO., 6789 UPLAND ST., PHILADELPHIA 42, PA. Featured in the company's line are many types of controllers, gauges, manometers, recorders, meters, valves and Venturi tubes, all of which are described and illustrated in *Bulletin 004*.

Cast-Iron Pipe

193 To assure the dependability of Super De Lavaud cast iron pipe, the ALABAMA PIPE CO. provides each section of pipe with a 500 pounds per square inch hydrostatic test, recording the results for your inspection. Water departments may obtain this pipe in inside diameters of 3- to 24 inches, in modern long lengths. Bell and spigot, mechanical joint, and flanged pipe are available. Address the company at ANNISTON, ALA.

Reflectorized Barricades

194 Use these lightweight, reflectorized units on street construction and maintenance jobs, at fires and traffic accidents, and wherever a dependable barricade is needed. Made by MICHIGAN FABRICATING & WELDING, INC., 1950 WELLWORTH, JACKSON, MICH., Jaxon barricades are available in two-color combinations with a variety of legends including: DANGER, STOP, CAUTION, and SLOW. An adapter hook facilitates the formation of a continuous barricade of any perimeter.

New Duplicator Makes More Copies Faster

195 Using the new D-44 duplicator, public offices can reproduce up to 500 copies from original records, letters, and other important documents, quickly and economically. The automatic unit is simple to operate, and is available with Ditto direct process carbon paper in four colors: purple, red, green, and blue. These colors may be reproduced independently or together in one operation. Additional data are available from DITTO, INC., 2216 HARRISON ST., CHICAGO 12, ILL.

Controls Weeds in Ponds and Lakes

196 The Fish and Wildlife Service, U. S. Dept. of Interior, suggests sodium arsenite for controlling much of the submersed vegetation found in ponds and small lakes. The CHIPMAN CHEMICAL CO., INC., BOUND BROOK, N. J., manufactures two forms of sodium arsenite for weed control; one a liquid solution, and the other a dry powder. A new pamphlet, discussing preparation of the chemical and dosages required, is available on request.

New Trimmer Mower with Leaf Pulverizer

197 An easy-to-handle trimmer-type rotary mower, powered by a lightweight Briggs & Stratton 2-hp, 4-cycle engine, cuts a 21-inch swath and mows over 300 square feet a minute. The leaf pulverizer shreds leaves into a fine mulch, eliminating raking, hauling and burning operations. Other models featured by this company are designed to cut 18- and 16-inch swaths. Write LAZY BOY LAWN MOWER CO., INC., 301 W. 73rd ST., KANSAS CITY 14, MO.

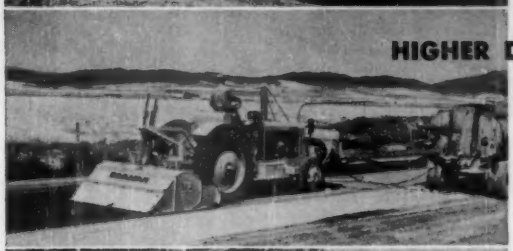
WHY YOU NEED A SEAMAN PULVI-MIXER FOR ALL YOUR MIXING....

CORRECTS AGGREGATE SEGREGATION

The unstable separation of coarse and fines *always* present when aggregates are transported, moved or pushed, is blended to absolute homogeneity. Coarse stone is keyed and inter-locked, voids are uniformly filled with fines.

MORE THOROUGHLY AND MORE COMPLETELY MIXES ANY BINDER WITH ANY MATERIAL

Any fluid of any viscosity, any granular material from cement to rock salt is evenly blended and dispersed to full depth. No "lean" or rich spots in bituminous mixing. Checks fluid binder migration or water evaporation.



HIGHER DAILY OUTPUT AT THE LOWEST COST

Mixing a mile a day of 21 foot roadway is average in bituminous construction and soil-cement; and even more in chloride, lime, gravel or sand clay stabilization. One man operation.

SUPERIOR FOR RECONSTRUCTION OF OLD BASE

Simply scarify and shape to new grade old bituminous, gravel or sand clay base, use the PULVI-MIXER to pulverize and re-mix with new binder, added if needed.

MIX IS READY FOR IMMEDIATE COMPACTION

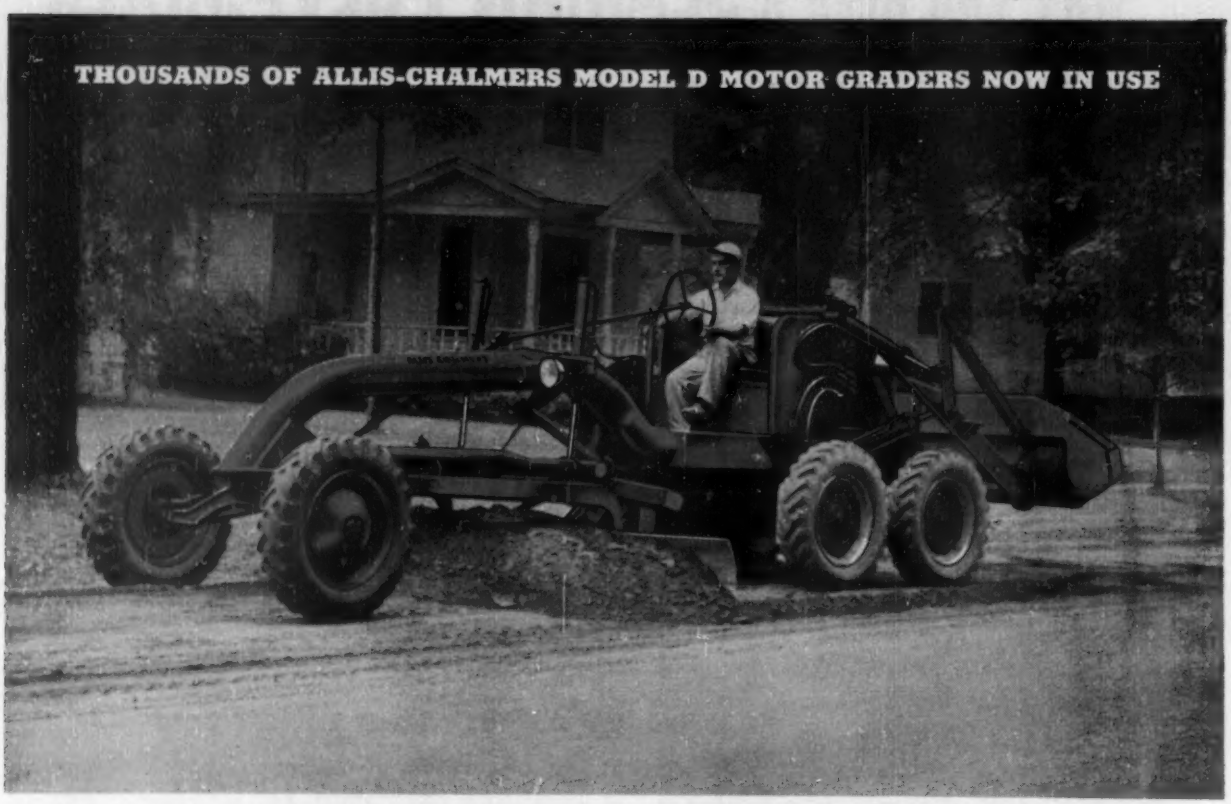
PULVI-MIXER holds the treatment to fine grade and crown previously established by the blades. Mix is level, smooth and partially compacted ready for rolling. No finish blading needed. Final compaction attains much higher density.

NEW BULLETIN completely describes SEAMAN Self-Propelled TRAV-L-PLANT and Self-Propelled PULVI-MIXER. Details processing information. Illustrates many field scenes. Send a postcard for Bulletin T.P.S.

SEAMAN MOTORS Inc.

292 NORTH 25TH ST.
MILWAUKEE, WISCONSIN

One-Machine Street Department — The versatile Model D with ⅝-yd. rear-end loader rough grades, spreads gravel, cleans up, loads trucks . . . gives many communities a one-man, one-machine street department.



Five Years in the Field Prove Big-Grader Performance . . . at One-Third the Cost

From its introduction in 1949, the Allis-Chalmers Model D established itself as a real pacemaker in the motor grader field. It was the first low-cost machine to offer such big-grader design and performance advantages as tandem drive, single member tubular frame and the famous ROLL-AWAY moldboard. To its thousands of satisfied owners, the Model D has proved again and again that it does outstanding work on both construction and maintenance.

The usefulness of this amazing machine goes far beyond basic blade functions, with several easily mounted attachments that make it invaluable all year 'round: hydraulically controlled, rear-end loader; shoulder maintainer that is interchangeable with loader bucket; "midship-mounted," hydraulically controlled scarifier; both blade and V-type snowplows.

To help cost-conscious communities, Allis-Chalmers has added even more to the Model D's workability. It now offers a new 50 brake horsepower, "POWER-CRATER" engine; leaning front wheels* and power circle turn*. Yet the Model D's original cost is still only one-third that of a large grader, and operating, service and replacement part costs are proportionately low.

We invite you to talk with your nearby Allis-Chalmers dealer . . . compare values . . . and then ask for a demonstration. Only by watching the Model D at work can you believe that a grader costing so little will do so much . . . *for you.*

*Optional Equipment

ALLIS-CHALMERS
TRACTOR DIVISION • MILWAUKEE 1, U. S. A.

ROLL-AWAY and POWER-CRATER are Allis-Chalmers trademarks.

Cuts Equipment Investment — Low original cost, low operating cost make the Model D today's biggest motor grader value. Compact and maneuverable, the "D" is a natural for close-quarter work.

Keeps Shoulders Safe — Model D shapes shoulder, blading windrow next to edge of pavement where rear wheels compact gravel . . . rear-mounted blade feathers out windrow . . . to keep shoulder safe and well-drained, *all in one pass.*

More Maintenance per Tax Dollar — You can have three Model D's for what one large motor grader would cost . . . maintain three times as many miles of road . . . keep your roads in good condition *all* the time.

LETTERS from communities —

Sirs:

We have been entirely satisfied with the Model D. It has proved to be a year 'round piece of equipment. We use it in the summer for grading and ditching and in the winter for plowing and it does both jobs well. Maintenance has been very moderate and your service excellent.

L. W. O'Connor
Town Manager
Bucksport, Maine

Sirs:

I have operated heavy equipment of all kinds, makes and models for 22 years. I find that with this machine (the Model D) there is no job too large or too small. I clean streets, take dirt off streets, cut a 32-inch ditch for gas, water and sewer lines and backfill, break out asphalt, work base, spread asphalt, maintain all city streets, and build streets for new suburbs. With the rear-end loader I use it for laying 6-inch water lines, clean out sod on city streets, load base material, use it as a dozer blade, and dig and clean out drain ditches at sewer plant.

This machine has finger-tip control and very good visibility . . . it is very easy to do precision work. I highly recommend this machine for high performance and very low maintenance.

Curtis M. Sollock
Superintendent of Streets, Water Works,
Gas & Sewage of the City of Devine, Texas

Sirs:

I have used our D Motor Grader two years. In that length of time I have found it to be very economical and efficient. We never use over a gallon of gasoline per hour on our hardest work. We have built several blocks of streets, sloped banks, cut ditches, and scarified black-top streets and reshaped them. We are going to reshape and refinish about twelve blocks of streets this year. We will use the D for scarifying and oil mixing. In fact, we don't expect to use any other machine on this job.

This machine is an operator's dream. We use our D and TLD Loader for snow removal. The city is very pleased with this machine's performance and economy. I, as the superintendent of streets, think it can't be beat.

George D. French
Superintendent of Streets
City of Lamoni, Iowa

Sirs:

Just a few lines to let you know some facts about the two Model D's Pike County purchased a few years ago. They enabled us to divide our mileage in such a way that each machine could make its route once a week instead of once every two weeks as had been the case in the past. The two Model D's were given a route of 30 miles each which they make in 4½ days. As a result we were able to maintain every road we have in the County once a week, therefore, all roads are kept in better condition.

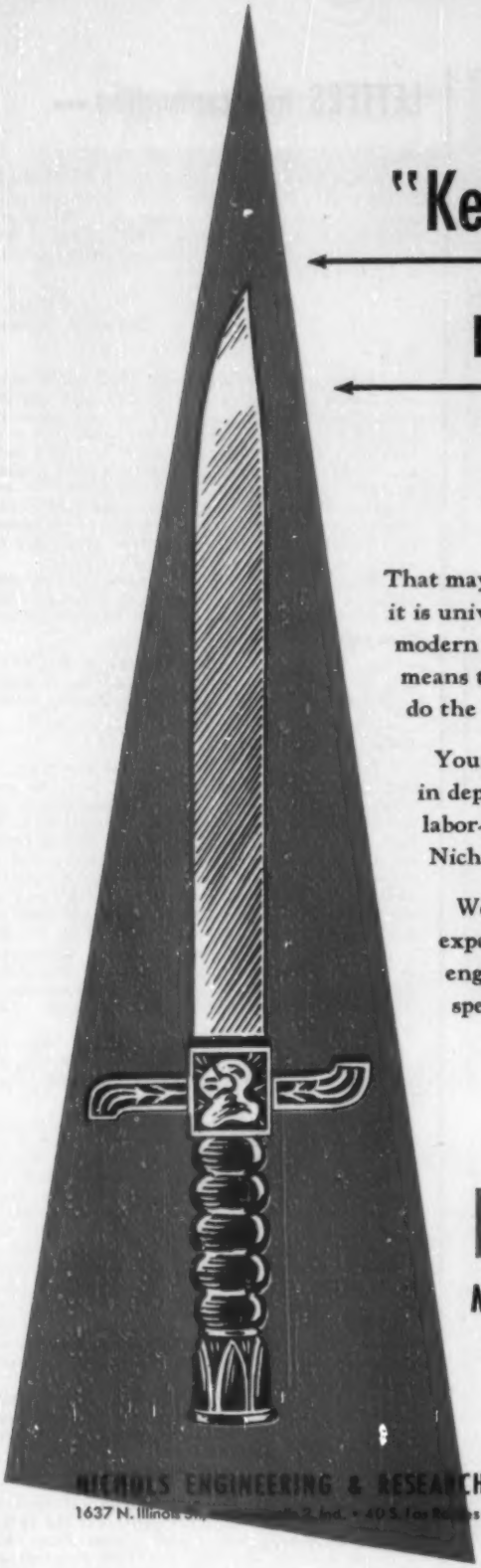
I am firmly convinced that Pike County has profited by the purchase of these machines as the roads are in better condition due mainly to regular routine maintenance.

Dallas Strubinger
County Superintendent of Highways
Pike County, Pittsfield, Illinois

Sirs:

We find our Model D very economical considering the work it performs. Especially like the ROLL-AWAY moldboard and operating ease. Have done a lot of grading, ditching, and snow removal, and find it very satisfactory for a town our size.

Clyde Wood
Road Supervisor
Chester R. Johnson
Water Supervisor
Holden, Utah



"Keener blade makes cleaner cut"

That may or may not be an old Chinese proverb, but it is universally true, even when applied to modern refuse disposal, because it means that it takes the finest equipment to do the best job.

Your community deserves the best in economy, in dependable performance, in modern labor-saving incinerator design . . . the Nichols Monohearth refuse incinerator.

We invite you to consult with the experienced staff of Nichols incineration engineers or write for more specific information.

Nichols Monohearth

Mechanically Stoked Refuse Incinerators

NICHOLS ENGINEERING & RESEARCH CORP. • 70 Pine St. • New York 5 • N.Y.

1637 N. Illinois St. [illegible] 2, Ind. • 405 S. Fair Oaks Ave., Pasadena 2, Calif. • 1477 Sherbrooke St. W., Montreal 25, Canada

. . . and Nichols Herreshoff multiple hearth dryer-incinerators for sewage sludge disposal

CUTS GUARD RAIL COSTS —speeds maintenance, too!

Ford Tractor with Danuser Driver and Breaker

Here's a faster, easier way to set posts for highway guard rails and park automobile barriers. Just back the Ford Tractor into position, touch the lever of the Danuser Driver and Breaker and a 200 pound weight drives a 6 inch post 2½ feet deep in 1 minute. Think what this can mean in time and labor savings!

Breaks concrete and rock quickly—easily!

With the Danuser Driver and Breaker you can make quick work of breaking concrete and rock. Special breaker head, sold separately, strikes 25 blows a minute to break up sidewalks and driveways in a hurry. Use it for tamping dirt, too.

The Danuser Driver and Breaker is one-man operated. A single operating lever provides control of drive weight through its complete operating cycle, thus permitting instant selection of impact force. On hillsides or uneven ground, you can adjust easily to plumb.

This new tool drives steel or wood posts up to 8 feet long. It attaches quickly to Ford's 3-point hitch and is powered by the Ford Tractor. Tripod-type legs hold it upright in storage.

The Danuser Driver and Breaker is just one of many money-saving tools designed for use with the low cost Ford Tractor. To find out about all of them, see your nearby Ford Tractor and Equipment Dealer or write to the address below.

TRACTOR AND IMPLEMENT DIVISION
FORD MOTOR COMPANY
Birmingham, Michigan

Ford TRACTOR

how much does it cost to run the old model?

Even if you bought new today one of the old model chlorinators, you can actually scrap it right now and save money!

How can such a thing be?

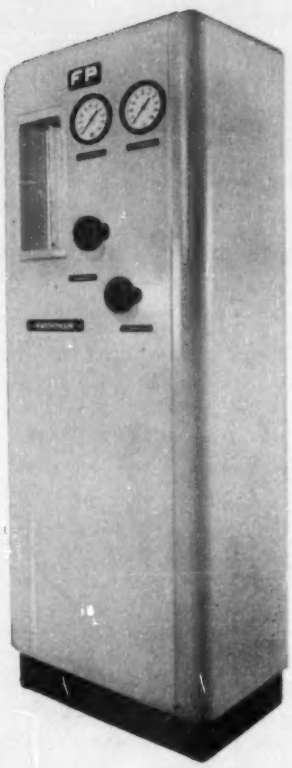
In hundreds of installations using F & P Chlorinators it has been proven conclusively that costs of operation and servicing are so much lower than old style chlorinators that it actually *costs money* right from the first day of operation to have an old style chlorinator.

Fischer & Porter designed this new chlorinator right from the floor up. New materials are used throughout to make it impervious to corrosion. Encased in a fibre-glass cabinet, the new F & P Chlorinator handles chlorine —in fully enclosed, tightly sealed, corrosion resistant pipes and components. It is the best, safest, most efficient, easiest operating chlorinator ever devised.

Right from the purchase price you save money on an F & P Chlorinator. And you save money every day thereafter, because you have less maintenance cost, less chance of breakdown with sky-high service charges, no need for multiple reserve units or scores of spare parts, no wasted chlorine gas lost through water seals.

As a top municipal official, as an ethical consultant, as a practical operating man—you must admit if all these things we say are true, you can't afford to ignore this new chlorinator.

It won't cost you a single penny to *get the facts* about the F & P Chlorinator. It will obligate you in no way. Why not write today?



FP

T.M., F&P CO.

complete process instrumentation

FISCHER & PORTER CO.

5484 Fischer Road, Hatboro, Penna.

LA-1005

18 YEARS EXPERIENCE SUCCESSFULLY MANUFACTURING CHLORINE FLOW METERING EQUIPMENT

Service lines go in fast with the new Ottawa backhoe on one end of the MM UTIL Wheeler and heavy-duty loader on the other. Unit trenches, loads, backfills and levels.

Speed service-line trenching with a cost-cutter on each end

Heavy-duty trenching for utility service lines becomes a faster, lower-cost job with this new Ottawa backhoe on one end of a Minneapolis-Moline Wheeler and loader on the other.

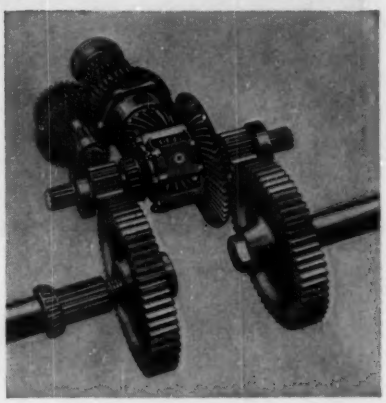
This Wheeler backhoe unit digs clean, square trenches, ditches and footings to a 9 ft. depth, offers bucket widths to 36″. Backhoe reaches 15′4″ for digging, 8′3″ for dumping into highest trucks. Loader backfills and levels to complete the job with cost-cutting speed.

A complete line of unitized attachments makes full use of extra Wheeler power, greater Wheeler torque at moderate engine speed. Attachments include forks for loading and hauling, lifting cranes, excavating and loading buckets, dozer blades, scrapers, winches, snowplows, material handling and maintenance equipment for construction, mining, all industry.

With "high turbulence" gasoline or "turbo-cell" diesel engines, MM Wheelers deliver full-rated power, extra-heavy construction that pays off in longer unit life.

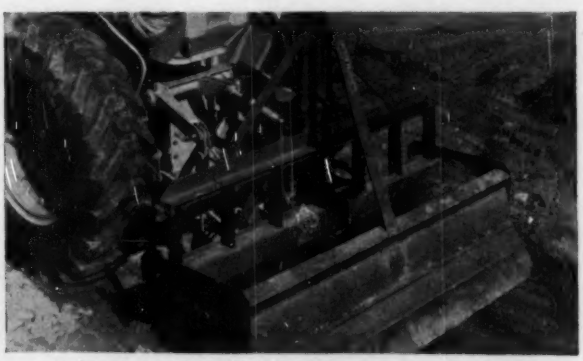
Before you buy any loader, see your Minneapolis-Moline dealer-distributor. Have him demonstrate to you that low-cost Wheelers will *return* your money *sooner*, *pay* you *longer*.

MINNEAPOLIS-MOLINE
MINNEAPOLIS 1, MINNESOTA

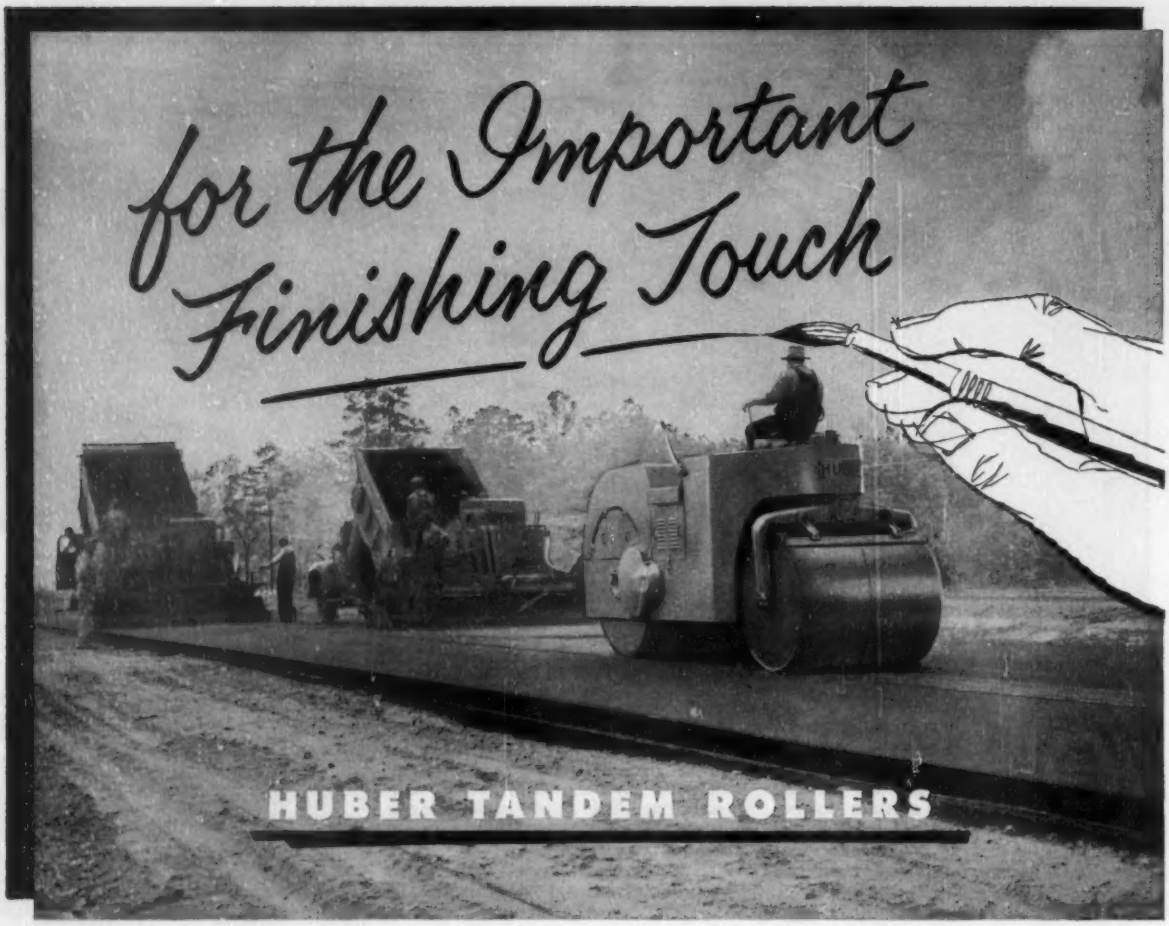


UTIL Wheelers pay you in longer tractor life with heavier construction, live rear axles 3 inches in diameter, bull gear final drive, greater bearing surfaces, transmission and differential operate in a constant oil bath.

Mowing around job sites, along highways, in plant yards is a low-cost operation with this flexible hydraulic drive mower mounted on the 30 hp. RTI Wheeler.



This Wheeler and hydraulically-controlled scraper offer leveling accuracy in a low-cost package. Heavy-duty 3-point hitch controls scraping depth, provides rigid mounting.



Why do without these Advantages?

Here's capacity to keep two finishing machines busy . . . Here's size to handle mile after mile of pavements on schedule . . . Here's freedom from scuffing, for Huber's guide roll assembly can be kept "factory new" for the life of the machine . . . Here's the fast, smooth, cushioned reversing of fluid coupling . . . Here are adjustable tapered roller bearings that add years of snug operation through adjustments that compensate for wear . . . Here is swivel pin and king pin design and construction that ends guide roll problems forever . . . Here is a heavy, rigid, wrap-around frame permitting close side clearance . . . HERE, in short, is EVERYTHING you've ever wanted in a tandem roller. Your nearest Huber Distributor will be happy to show you Bulletin T-152 and give you the rest of the story.

ABOVE

This big HUBER keeps two finishing machines hustling on an expressway in the South. Other HUBER Tandems are busy on blacktop jobs throughout the world.

HUBER MANUFACTURING CO. • Marion, Ohio, U. S. A.
Manufacturers of Huber Maintainers, Graders and Complete Line of Rollers

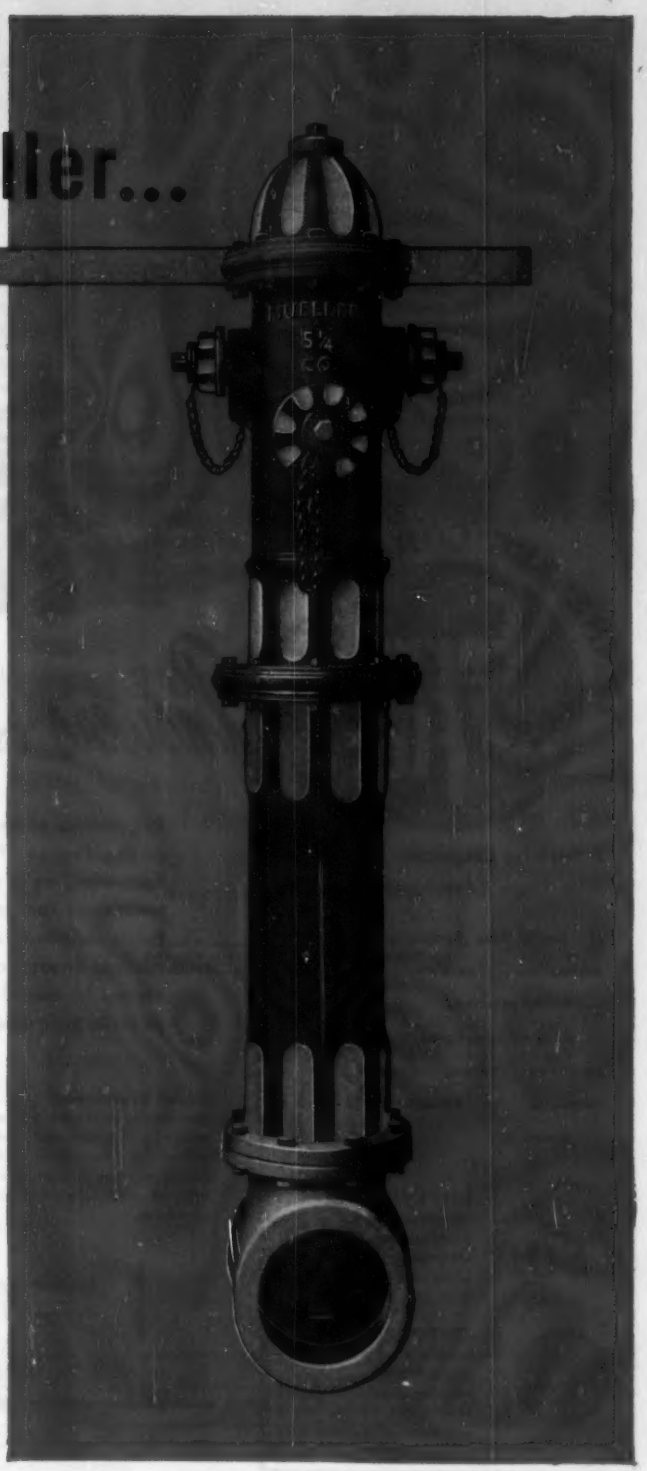
HUBER

MUELLER

Specify Mueller...

and you get all of these improved Fire Hydrant features

- AUTOMATIC LUBRICATION
- SAFETY FLANGE CONSTRUCTION
- SAFETY STEM COUPLING
- DRY TOP DESIGN
- COMPRESSION TYPE MAIN VALVE
- DOUBLE AUTOMATIC DRAIN VALVE
- "O" RING SEALS
- FULLY BRONZE MOUNTED
- BREECH-LOCKED NOZZLES
- DESIGNED FOR ABOVE GROUND MAINTENANCE

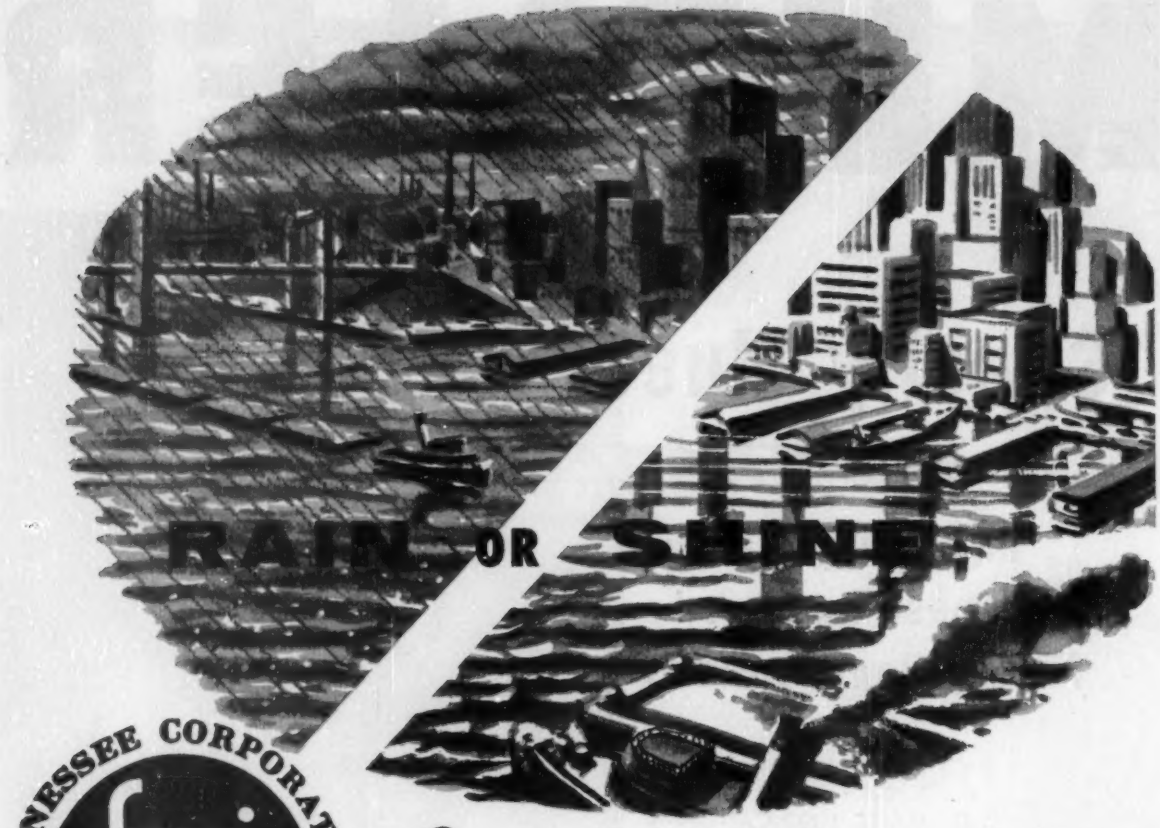


Add Mueller Catalog A-201 to your Fire Hydrant catalog file. Write today.

MUELLER CO.

Dependable Since 1857

CHATTANOOGA, TENNESSEE



TENNESSEE CORPORATION

Ferri-Floc — FERRIC SULPHATE

Answers Your Water Treatment Problems

A Superior Coagulant With These Advantages:

① *Rapid Floc Formation* ② *PH correction* ③ *Taste and odor control* ④ *Color removal* ⑤ *Softening* ⑥ *Ease of operation* ⑦ *Bacterial removal* ⑧ *Manganese and Silical removal* ⑨ *Turbidity removal* ⑩ *Economy*

SULPHUR-DIOXIDE — SO_2

SULPHUR-DIOXIDE is effectively used for dechlorination in water treatment and to remove objectionable odors remaining after purification.

COPPER SULPHATE

COPPER SULPHATE will control about 90% of the microorganisms normally encountered in water treatment plants more economically than any other chemical.

Regardless of the weather, your water treatment problems, or the degree of turbidity of your surface water, Ferri-Floc, as a superior coagulant, will meet your water treatment requirements. Ferri-Floc is a partially hydrated Ferric Sulphate which converts high turbidities without radical dosage changes. Only mildly hygroscopic, it can be stored in closed hoppers over long periods of time... permits safe and easy handling.

Water Treatment

Ferri-Floc coagulates surface or well waters, and it aids taste and odor control. It is effective in lime soda-ash softening, and is adaptable to treatment of practically all industrial water or wastes.

Sewage Treatment

Ferri-Floc coagulates waters and wastes over wide pH ranges. It provides efficient operation regardless of rapid variations of raw sewage, and is effective for conditioning sludge prior to vacuum filtration or drying on sand beds.

Samples, Specifications and Detailed Information Available upon Request.

TENNESSEE TC **CORPORATION**

TENNESSEE CORPORATION

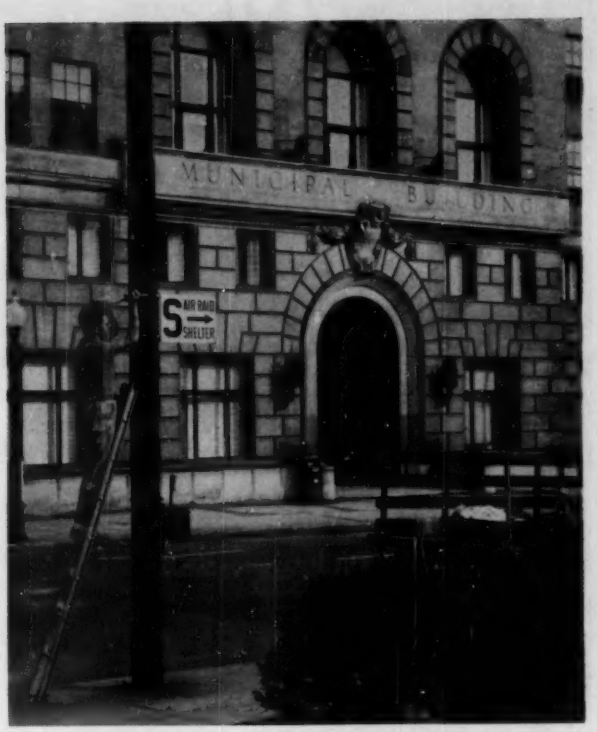
617-629 Grant Building, Atlanta, Ga.

In Akron . . .

STEELBINDER

Fastens the Signs

A. J. GERRARD & COMPANY, a leader in the steel strapping field, salutes another great leader among America's cities, Akron, Ohio. In its constant search for better and more efficient methods, Akron's Division of Safety Engineering found Steelbinder outstanding for permanent, safe street sign fastening. Many other leading American cities have reported like findings. We invite you to investigate and compare.



Up goes a new air raid shelter sign fastened the Steelbinder way, across from Akron's Municipal Building.

H. B. Woodling, Safety Engineer, City of Akron Department of Safety, Division of Safety Engineering.

Try Akron's Method . . .

. . . the Steelbinder way of strapping signs. Our "Street Signs" brochures will familiarize you with this time-saving, economical, more efficient method of sign strapping. Write for them today . . . A Steelbinder service representative will gladly help you solve your sign strapping problem.

STEELBINDER

- Strapping in stainless or galvanized for sign applications. Also aluminum and many other strap types to fill every sign strapping requirement.
- Complete line of sign-attaching accessories—brackets, extension arms, bolts and seals in stainless and galvanized finishes.

WAREHOUSES IN 6 KEY CITIES

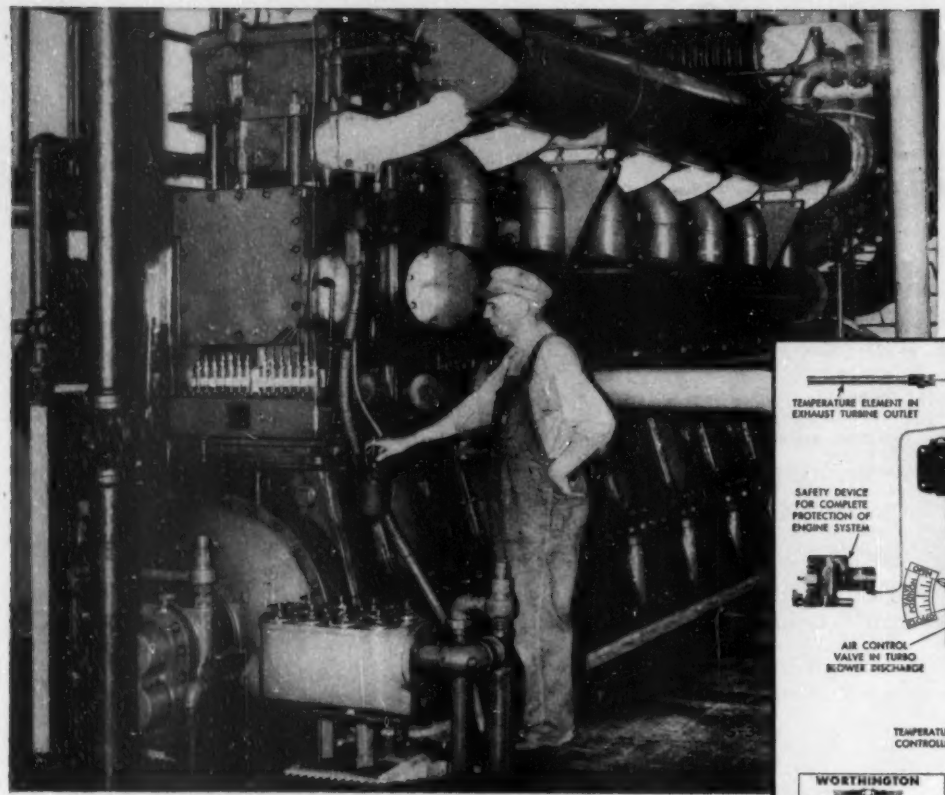
BIRMINGHAM	OAKLAND
CLEVELAND	PORTLAND
NEWARK	MELROSE PARK

STEEL STRAPPING

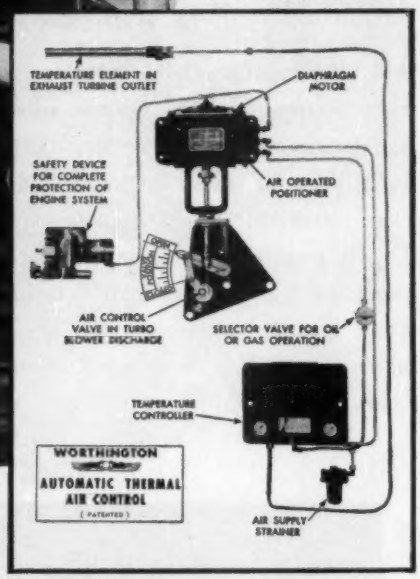
Sales-Service Offices in 45 Principal Cities

A. J. Gerrard & Company

1952 HAWTHORNE DRIVE
MELROSE PARK (CHICAGO SUBURB), ILLINOIS



WORTHINGTON 1,000-KW CAPACITY SUPERCHARGED DUAL FUEL DIESEL with Worthington's Automatic Thermal Air Control, used in conjunction with municipal steam generating plant at David City, Nebraska.


TEMPERATURE ELEMENT IN EXHAUST TURBINE OUTLET
DIAPHRAGM MOTOR
SAFETY DEVICE FOR COMPLETE PROTECTION OF ENGINE SYSTEM
AIR OPERATED POSITIONER
AIR CONTROL VALVE IN TURBO BLOWER DISCHARGE
SELECTOR VALVE FOR OIL OR GAS OPERATION
TEMPERATURE CONTROLLER
WORTHINGTON
AUTOMATIC THERMAL AIR CONTROL
(PATENTED)
AIR SUPPLY STRAINER

Cost-per-kw down over 60% with Worthington Dual Fuel Engine

David City, Nebraska—this city has proof that the Worthington Dual Fuel Diesel can reduce power-plant operating costs.

Engineering of this installation—made in August, 1949—was under the direction of Black and Veatch, Kansas City, Mo., Consulting Engineers. At the present time the unit operates at only one-third capacity in supplementing steam power generation.

In spite of these poor load conditions, the David City plant's overall operating cost per kw was down 60% the first year this engine was used.

ONE BIG REASON YOU GET MORE EFFICIENCY FROM THIS ENGINE

Worthington's Automatic Thermal Air Control—an exclusive patented Worthington feature—is one of the biggest reasons you get more efficiency from this dual fuel engine—or from Worthington gas engines.

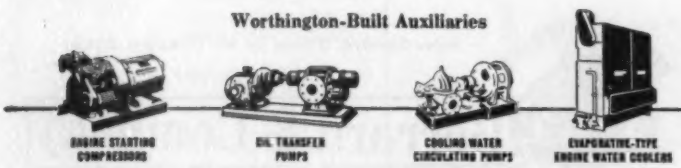
Unlike any air throttling mechanism dependent on governor action, this unit is actuated by engine exhaust temperature.

It maintains optimum air-fuel ratio at all times; provides automatic variation of air quantity in direct relation to ambient air temperatures; automatically compensates for changes in the heating values of the gas fuel (this would require manual adjustment where air-throttle controlled governor is used); maintains highest fuel economy at all loads regardless of changes in air temperature or fuel quality.

Worthington engines can increase *your* plant's efficiency and lower its operating costs. For more facts on Dual Fuel or other engines, gas or Diesel, write for bulletins to Worthington Corporation, Engine Division, Buffalo, N. Y.

E.3.1

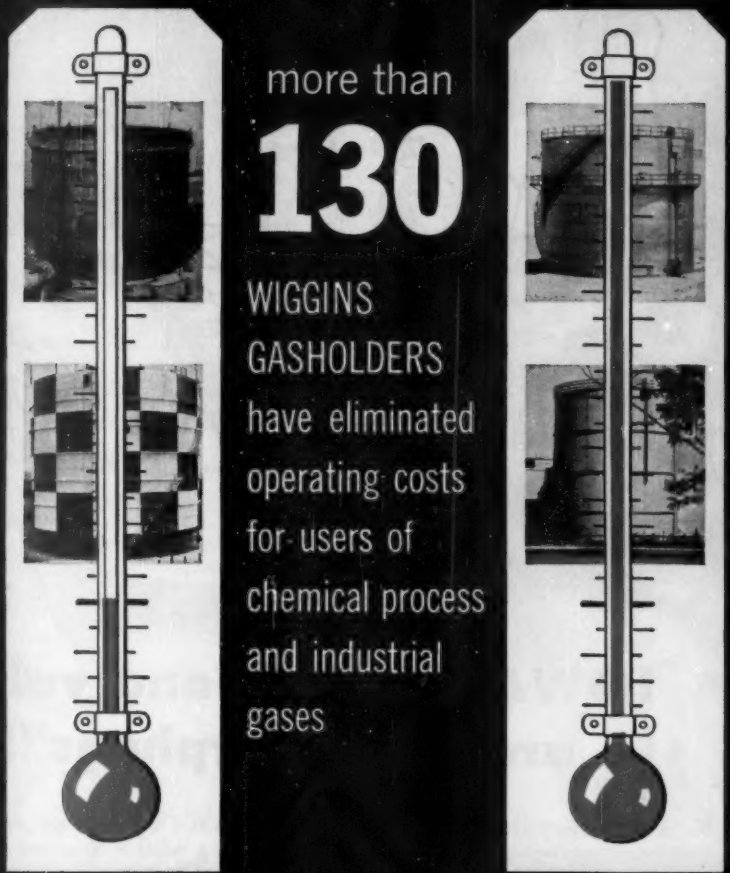
Worthington-Built Auxiliaries



Economical Continuous Power—Diesel Engines, 150 to 2,100 hp . . . Gas Engines, 190 to 2,100 hp . . . Dual Fuel Engines, 345 to 2,100 hp.

WORTHINGTON
Engines

from the **ARCTIC** to the **TROPICS**



more than

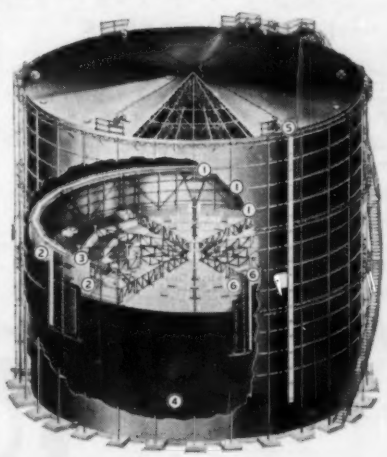
130

WIGGINS GASHOLDERS have eliminated operating costs for users of chemical process and industrial gases

This 100% dry seal gasholder (no water, no tar, no grease) has proved itself under every condition of climate and temperature. Because of the seal and the simple operating mechanism, operating costs have been entirely eliminated. Comparison of maintenance expense by owners of Wiggins gasholders also shows remarkable savings. Companies who have converted old-type gasholders to the Wiggins advantages have been able to enjoy similar savings. Write for information.

PISTON RISES NEARLY TO TOP—MINIMUM OF WASTE SPACE
CAN BE BUILT ANY SIZE • NO CONTAMINATION OF GAS

1. Space above piston completely ventilated
2. Wide clearances simplify operation.
3. Gas-tight frictionless seal not affected by weather.
4. Piston rests on bottom when empty—less than ½ of 1% dead space for purging.
5. Leveling device—independent of side wall—keeps piston level.
6. Fenders prevent all tension in seal.



Wiggins Gasholder

by

GENERAL AMERICAN

WIGGINS VAPOR SEALS
GENERAL AMERICAN
TRADE MARK

General American Transportation Corporation
135 SOUTH LA SALLE STREET • CHICAGO 90, ILLINOIS

Offices in Principal Cities

Export Dept.: 380 Madison Avenue, New York 17, N. Y.
Plants: Birmingham Ala. • East Chicago, Ind. • Sharon, Pa.
In Canada: Toronto Iron Works, Ltd., Toronto, Ontario

Proud "city fathers" must look to the future, too!

IOWA hydrants and valves are never "orphans"!

No need to worry about the future of your city's water system when you choose *Iowa*. You know you're buying a reliable product from a reliable firm and that there will always be replacement parts, when and as needed. What you may not know, though, is this . . . *Iowa* hydrants are easily and economically serviced—even by new employees without special training.

Below are additional facts to keep in mind when you plan to expand or replace any part of your city water works.

IOWA HYDRANTS

Provide full, truly unrestricted water way.

Open *with* the pressure for faster water delivery.

Close *against* the pressure to eliminate water hammer, provide flushing action.

Assure positive drainage.

Are available for any type of connection.

All working parts removable through top—no digging or special tools required.

Meet all A.W.W.A. specifications.

IOWA GATE VALVES

Double disc, parallel seat.

Positive wedging action for efficient, no-leak closing.

Gates hung loosely from stem nut—no binding.

Rugged, time-proved design means long life, low service costs.

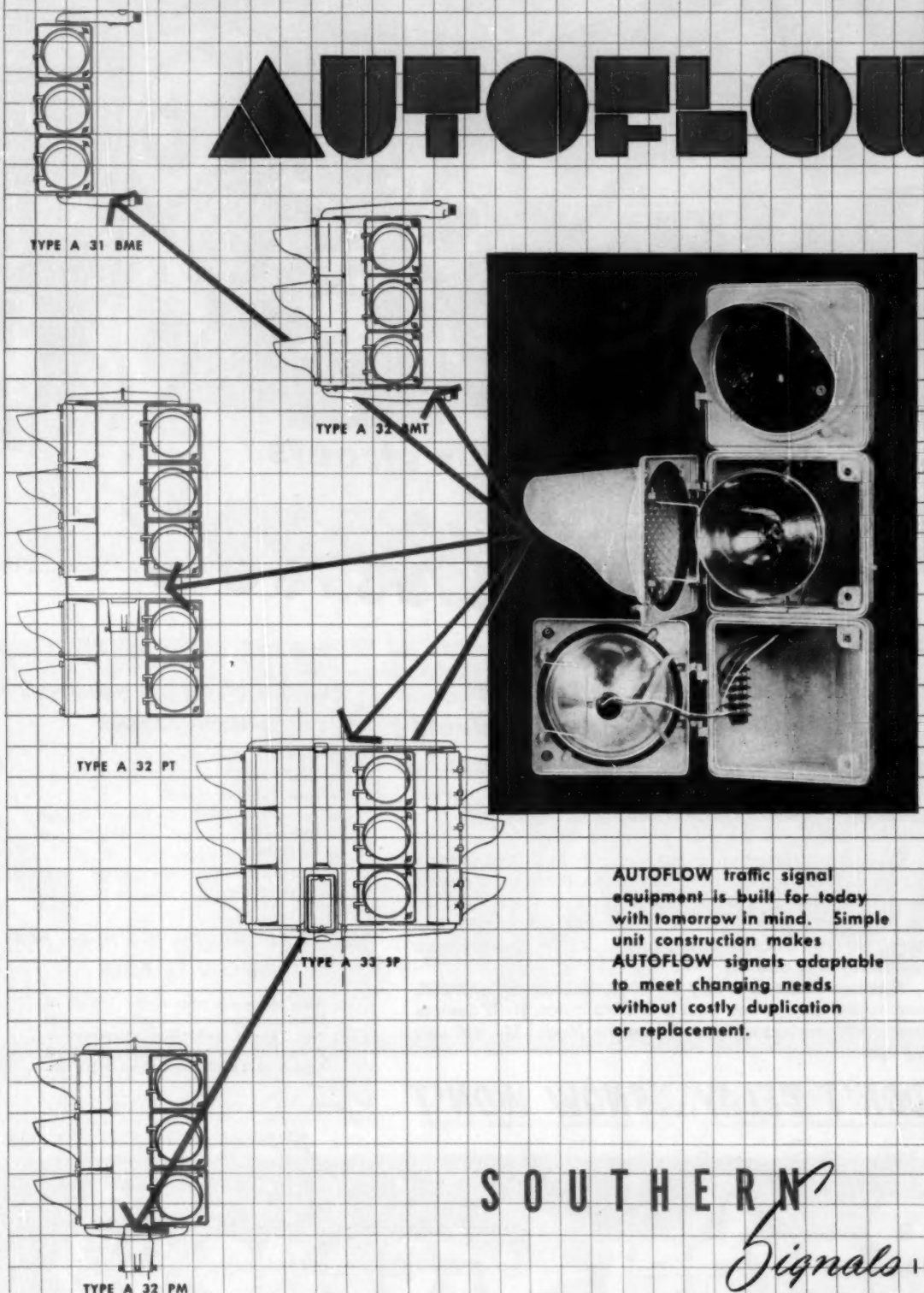
Available with bell, flange, or mechanical joint connections to fit any existing or planned installation.

Meet all A.W.W.A. specifications.

The best insurance policy is the order that specifies IOWA!

IOWA VALVE COMPANY
A Subsidiary of James B. Clow & Sons
201-299 NORTH TALMAN AVENUE
CHICAGO 80, ILLINOIS

AUTOFLOW



AUTOFLOW traffic signal equipment is built for today with tomorrow in mind. Simple unit construction makes AUTOFLOW signals adaptable to meet changing needs without costly duplication or replacement.

SOUTHERN Signals INC.

222 BEACH STREET • P. O. BOX 1303 • SHREVEPORT, LOUISIANA

how to clear your streets IN A HURRY!

Barber-Greene Snow Loaders remove snow at 7-11 yards per minute

The time to remove snow is right after it falls. Once you permit snow to thaw and refreeze into an unmanageable mass, fire and safety hazards multiply . . . traffic snarls . . . parking meter and business revenues decrease.

To clear your streets in a hurry, look to the Barber-Greene Model 544 Snow Loader. This proven machine removes snow at a 7 to 11 yard-per-minute clip . . . keeps even the largest trucks moving in a continuous production line requiring only a single traffic lane . . . moves quickly from one location to another.

Whether yours is a city of 3,000, 300,000 or 3,000,000, now is the time to see your B-G Distributor. He'll demonstrate, with facts and figures, how the *Model 544 will pay for itself.*

DON'T DELAY...SNOW WON'T

Features of the B-G Model 544 SNOW LOADER

- One-Man Operation
- Loads and Trims Long, High-Sided Trucks
- Low Clearance—12' 0"
- Loads Over Cab or with Trucks Alongside
- Hydraulically Controlled Swivel Conveyor
- 15 M.P.H. Road Speed
- Delivers 7-11 Yards per Minute
- Ample Traction and Stability

Other uses for the B-G Model 544 SNOW LOADER

After the snow season, the B-G Snow Loader, a year 'round machine, handles coal, leaves and other nonabrasives. Also, it can be converted into a Bucket Loader to handle aggregate materials.

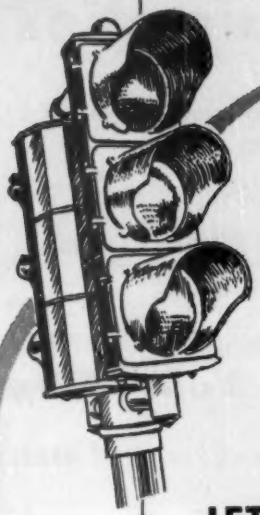
53-22-A-SL

Barber-Greene BG

Aurora, Illinois, U. S. A.

EAGLE AUTO-MOTION

MEANS THE FINEST TRAFFIC CONTROL

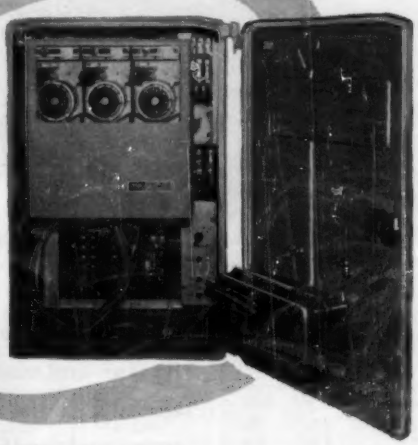


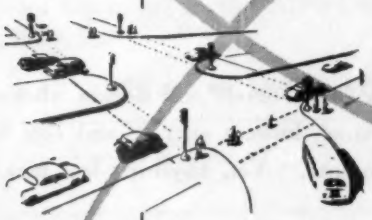
Eagle traffic control equipment is the latest in modern engineering. It is the ultimate in versatility, to better answer today's problems and protect the budget for tomorrow. The new "EF 20" controller again leads the way for lower, easier maintenance. See the newest most versatile answer to your present and future traffic problems. Investigate the money-saving features.

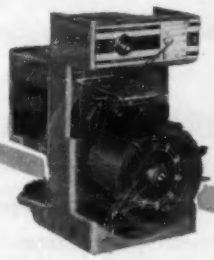
ASK FOR A DEMONSTRATION TODAY

LET EAGLE *Safeguard* THE FUTURE

The new "EF 20" controller is completely accessible from the front of the cabinet. All extra features may be easily installed using only simple tools. Controller is wired complete for 19 signal circuits.







INSIST ON THE BIG 3

1. **The most accessible Multi-dial controller availabie today.**
2. **The most adaptable controller for your future demands.**
3. **The most rugged designed controller for heaviest duty traffic.**

EAGLE SIGNAL CORPORATION *Moline, Illinois*

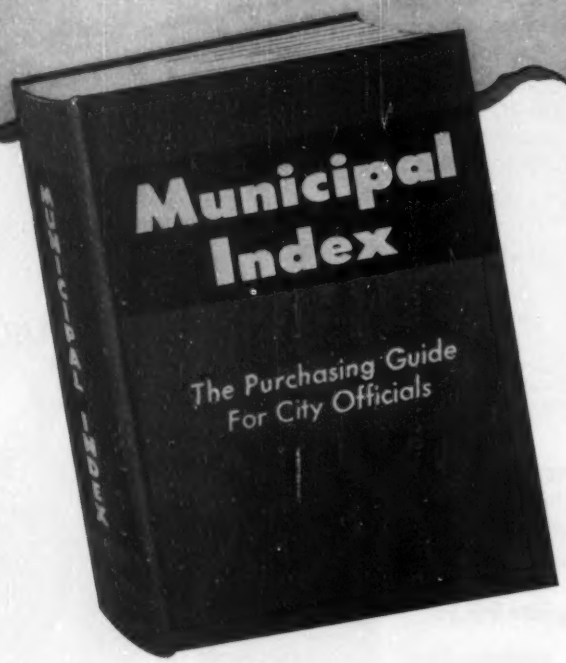
EAGLE EQUIPMENT SAVES LIVES — SAVES TIME

PAGE 955

Who's Who in

Equipment and Supplies

Indexed by Products — Turn to page numbers shown for listing of manufacturers under each product



Has Your City An Up-to-Date Complete List of Suppliers?

Many cities have ceased to worry about this by adopting the MUNICIPAL INDEX WHO'S WHO IN EQUIPMENT AND SUPPLIES as their official list of national suppliers.

Examine this WHO'S WHO section for yourself and decide whether your city (or any city) could afford the time, human energy, and cost to maintain such a list accurately and up-to-date. Yet, anything less means hamstrung and inefficient purchasing.

Get used to using the MUNICIPAL INDEX WHO'S WHO IN EQUIPMENT AND SUPPLIES as your regular list of national suppliers. That's what it's for. It will save you money and trouble.

Municipal Index

470 Fourth Avenue, New York 16, N. Y.

MUrray Hill 5-9252

Figures Tell the Story about the Low Maintenance Costs with DORR CLARIFIERS

...and the Baltimore Sewage Treatment Plant is a typical **Case in Point...**

16 years ago the Baltimore Department of Public Works installed its first two center-drive Dorr Clarifiers. Since then, 4 additional units have been added. The figures below tell the actual repair costs story. They are not "exceptions to the rule" but are typical of the low maintenance costs of Dorr Clarifiers reported by city after city.

Maintenance costs are one of the primary factors upon which Clarifier excellence should be judged. Are you getting the best?

We'd like to tell you how Dorr Clarifiers stack up on performance, too. Ask a Dorr Engineer for the facts.

Here are the Repair Cost Facts

Number of Units	Size of Clarifiers	Years of Operation	Repair Parts Cost*			Repairs as % of	
			Total	Per Unit	Per Unit Per Year	Original Cost	Original Cost Per Year
2	170 ft. Diameter	16	$241.40	$120.70	$7.55	1.08	0.068
1	170 ft. Diameter	15	no repair costs to date				
2	126 ft. Diameter	14	168.20	84.10	6.01	0.95	0.068
1	170 ft. Diameter	3	no repair costs to date				

*includes modest unsegregated labor costs

Better tools TODAY to meet tomorrow's demand

DORR

FIFTY YEARS 1904-1954

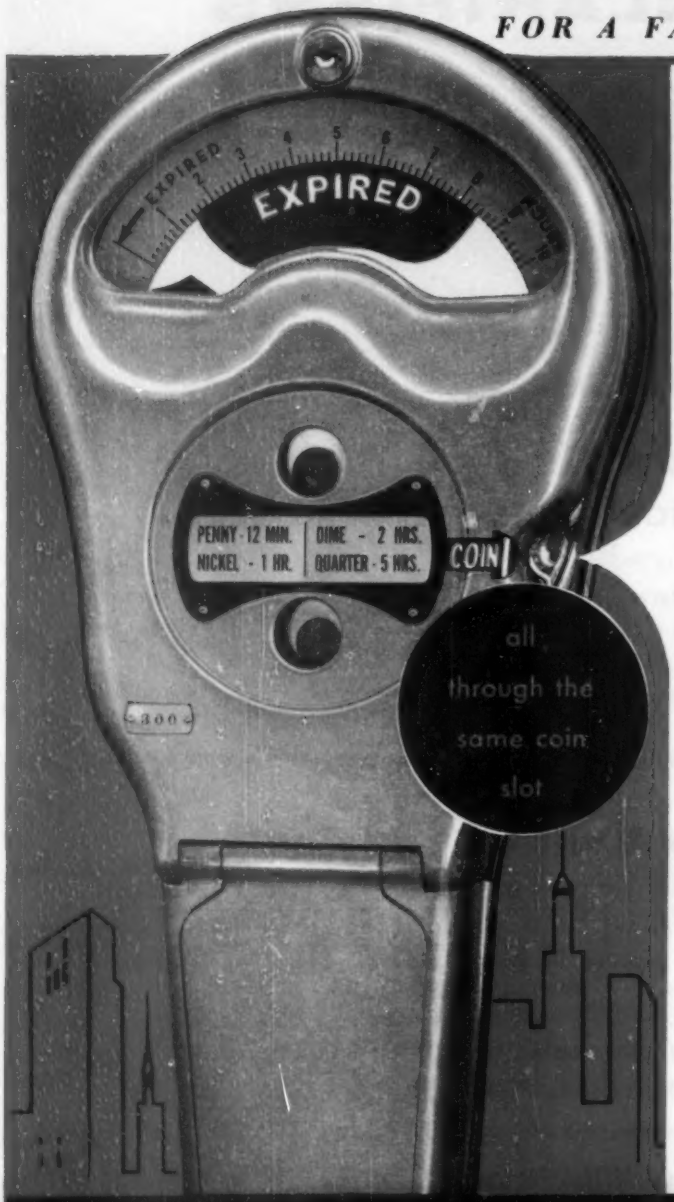
WORLD-WIDE RESEARCH • ENGINEERING • EQUIPMENT

THE DORR COMPANY • ENGINEERS • STAMFORD, CONN.

Offices, Associated Companies or Representatives in principal cities of the world.

PARK-O-METERS

the finest parking-meter
FOR A FAST-GROWING CITY



1c — SHORT LIMITS — on street and off-street lots

5c

LONG LIMITS — on fringe area streets and off-street lots

10c

25c — ANY LIMIT — 6 minutes to 24 hours

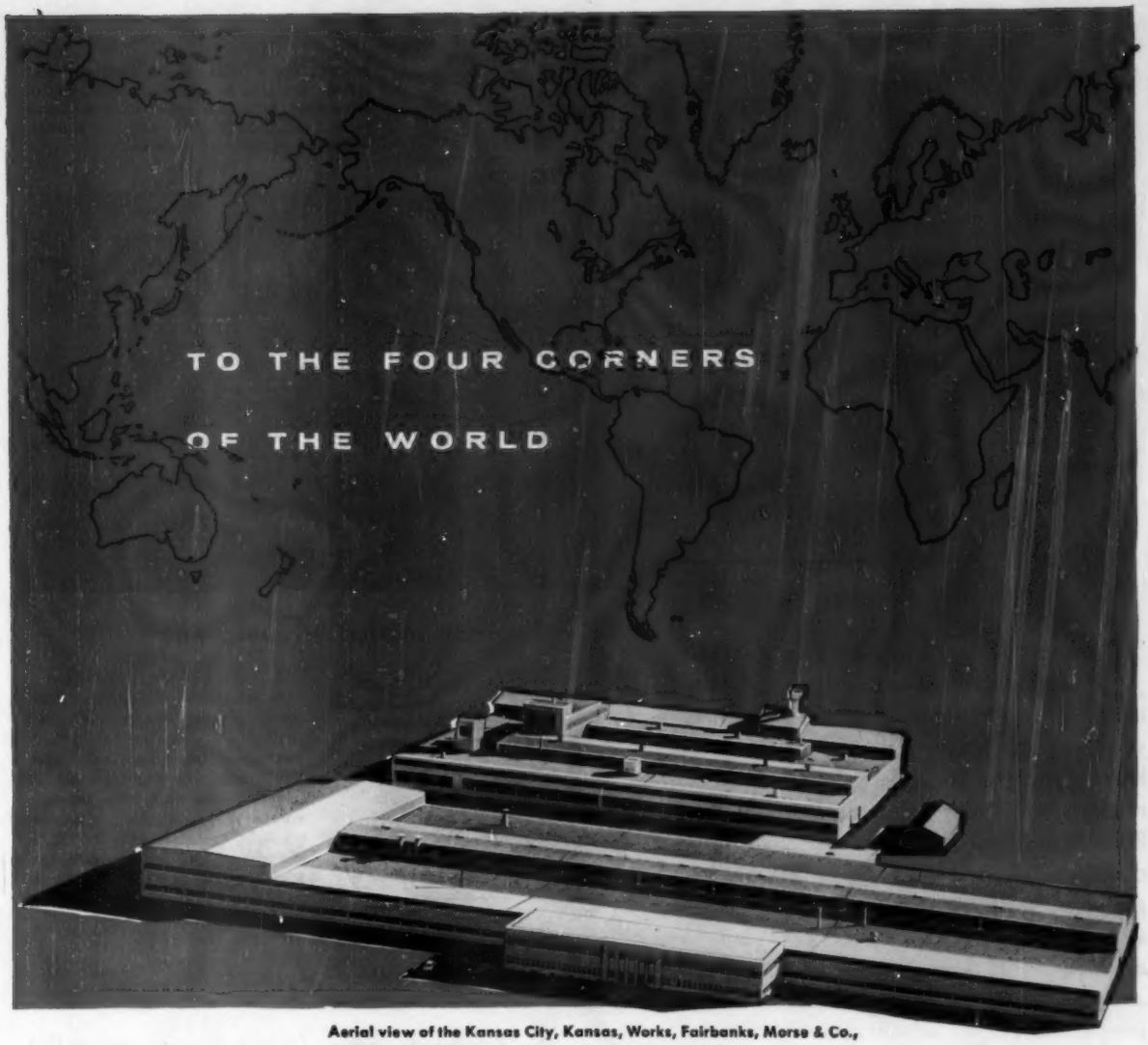
AUTOMATIC • SIMPLE • POSITIVE

nothing equals Park-O-Meter in flexibility, reliability, quality and convenience.

Tell us your city's problem
WE CAN HELP YOU. NO OBLIGATION

Magee-Hale
PARK-O-METER COMPANY
OKLAHOMA CITY 2, OKLAHOMA

Created by the originators of Metered Parking



Aerial view of the Kansas City, Kansas, Works, Fairbanks, Morse & Co., 3601 Kansas Avenue.

...from Kansas City

Yes, from our new, modern-as-tomorrow works at Kansas City, we serve the world's needs for pumps.

As a major supplier of quality pumping equipment, it is particularly suitable that this new Fairbanks-Morse plant be located at an important crossroads of the world ... Kansas City. In this new plant 190,000 square feet of manufacturing space and a complete foundry occupying 150,000 square feet are devoted to bringing better service to our customers all over the world.

Modern manufacturing, development and testing equipment backed by engineering and production skills of highly trained personnel combine to produce products of unmatched quality ... in performance, durability, economy. Fairbanks, Morse & Co., Chicago 5, Illinois.

FAIRBANKS-MORSE

a name worth remembering when you want the best

PUMPS • SCALES • DIESEL LOCOMOTIVES AND ENGINES • ELECTRICAL MACHINERY • RAIL CARS • HOME WATER SERVICE EQUIPMENT • FARM MACHINERY • MAGNETOS

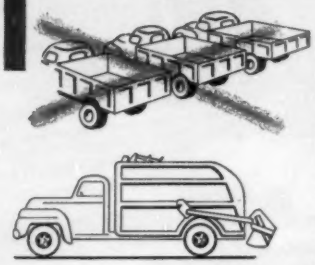
Pax-all's big 6' wide, ¾ yd. loading bucket enables full crew to *load from both sides at same time.* Takes one man only one second to start automatic loading cycle . . . then he is free to go for next container.

Why Pax-all* is the best refuse collection system for your city

Before you buy any new refuse collection *equipment* — or sign any contracts with *private haulers* — it will pay your city to investigate the *economy* of having your refuse collected this efficient, modern way with St. Paul Pax-alls. For Pax-alls not only eliminate the unsanitary condition of dripping, blowing, stinking garbage . . . they also give you *faster, more dependable collection of BOTH garbage and rubbish at lower net cost per ton than any other method.* Yet you get all these job-proved Pax-all advantages without any sacrifice in equipment quality or long-term performance. Your local St. Paul Distributor will gladly arrange a convincing Pax-all demonstration without any obligation. Just drop us a post card or letter today. St. Paul Hydraulic Hoist, Customer Service Dept., 36125 Main St., Wayne, Mich.

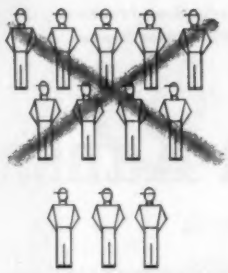
* *Pax-all* — is the registered trademark of St. Paul Hydraulic Hoist

1 Lowest initial investment



One modern enclosed Pax-all replaces 2 to 3 unsightly open trucks . . . *saves up to 70% in equipment purchase cost alone.* You'll also find Pax-all costs up to 30% less than other modern compaction-type units . . . mounts on light, maneuverable 84" C/A chassis, which saves an additional $300 per unit over larger chassis needed for other loaders.

2 Lowest operating cost



Pax-all's automatic cram-packing enables crews to collect both garbage and trash at same time — with up to 66% *less labor,* 50% *fewer trips to dump* than open truck method. Lighter weight Pax-all chassis also assures *extra savings* in gasoline, tires, taxes, license, etc., which results in lower net cost per operating hour.

3 Lowest maintenance cost

Pax-all's *simplified* compacting mechanism . . . plus use of *only one hydraulic cylinder* for handling all loading, compacting and dumping operations . . . assures much lower maintenance cost than any other loader. Any good mechanic can easily service the Pax-all mechanism . . . no hydraulic specialist needed.

SP-PC-5

St. Paul HYDRAULIC

Pax-all*

Keeps sanitation costs DOWN!

If you're interested in water works,

...let us send you a copy of this booklet which tells how new Ring-Tite Coupling cuts costs

WHETHER you're engineer, contractor or water works official, whether you're responsible for selection, installation or operation of water lines, here is a booklet that can show you the way to save money. It tells about the many outstanding features of the new Ring-Tite® Coupling; how water line assembly time is saved every step of the way; how it saves at valves, hydrants and fittings; how it pairs up with Transite® Pressure Pipe, the asbestos-cement product, that has set the pace for performance in water line service.

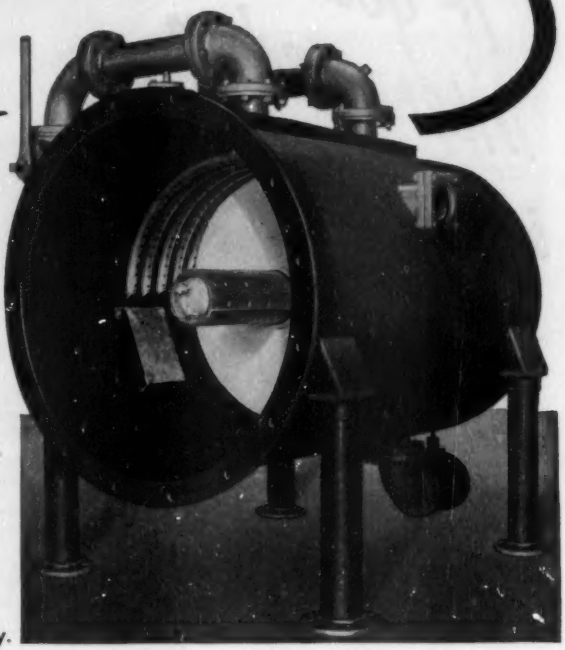
Get your copy today . . . write for Brochure TR-142A, Johns-Manville, Box 60, New York 16, N. Y.

JOHNS-MANVILLE JM PRODUCTS

Johns-Manville TRANSITE PRESSURE PIPE

WITH NEW RING-TITE COUPLING

A new trend in municipal water filtration—
The SPARKLER DIATOMITE FILTER MODEL SCJ
has been highly successful in installations now in operation



Reduced operating cost due to long filtering cycles and fast backwash cleaning, together with a remarkably low bacteria count requiring a minimum of chlorination, are features that make this new type filter worthy of the attention of all waterworks engineers.

Practically any volume of city water can be filtered economically in the Sparkler SCJ filter. Single units capable of handling 5,000,000 gallons of water a day are available. Multiple units can be engineered into a system for larger requirements.

Less than 0.2% of water is required to backwash and clean the largest filter units and a complete fresh precoat of diatomite can be applied and the filter ready to resume operation in 15 minutes.

Operators can be easily trained, no highly skilled specialized personnel is required to insure efficient performance.

Write for plans and prices on your requirements. Address Dan Baldwin for personal service.

SPARKLER MANUFACTURING CO.

Home office and plant, Mundelein, Ill.

EUROPEAN PLANT
Prinsengracht 876
Amsterdam, Holland

CANADIAN PLANT
Galt, Ontario

Manufacturers of industrial filters for over a quarter of a century.

Nite-Bright
HIGHWAY SIGNS
"BRIGHT BY DAY— BRILLIANT BY NIGHT"

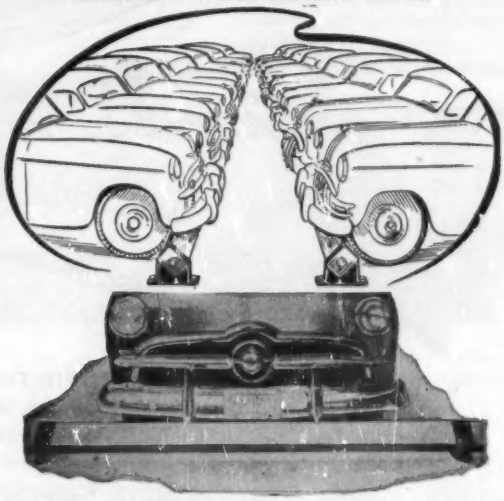
FOR THE BEST IN TRAFFIC SIGNS (heavy type)
ALUMINUM SIGNS REFLECTORIZED WITH SCOTCHLITE • EMBOSSED STEEL BAKED ENAMEL SIGNS
CHANNEL IRON SIGN POSTS IN STOCK
TRAFFIC CONES—IMMEDIATE SHIPMENT

See Our Listing in the 1954 Edition of The Municipal Index

Write Us for Complete Information

NITE-BRIGHT SIGN COMPANY
140 JAMES STREET, BRIDGEPORT 4, CONN.

IDEAL FOR "OFF THE STREET" PARKING
WITH OR WITHOUT PARKING METERS

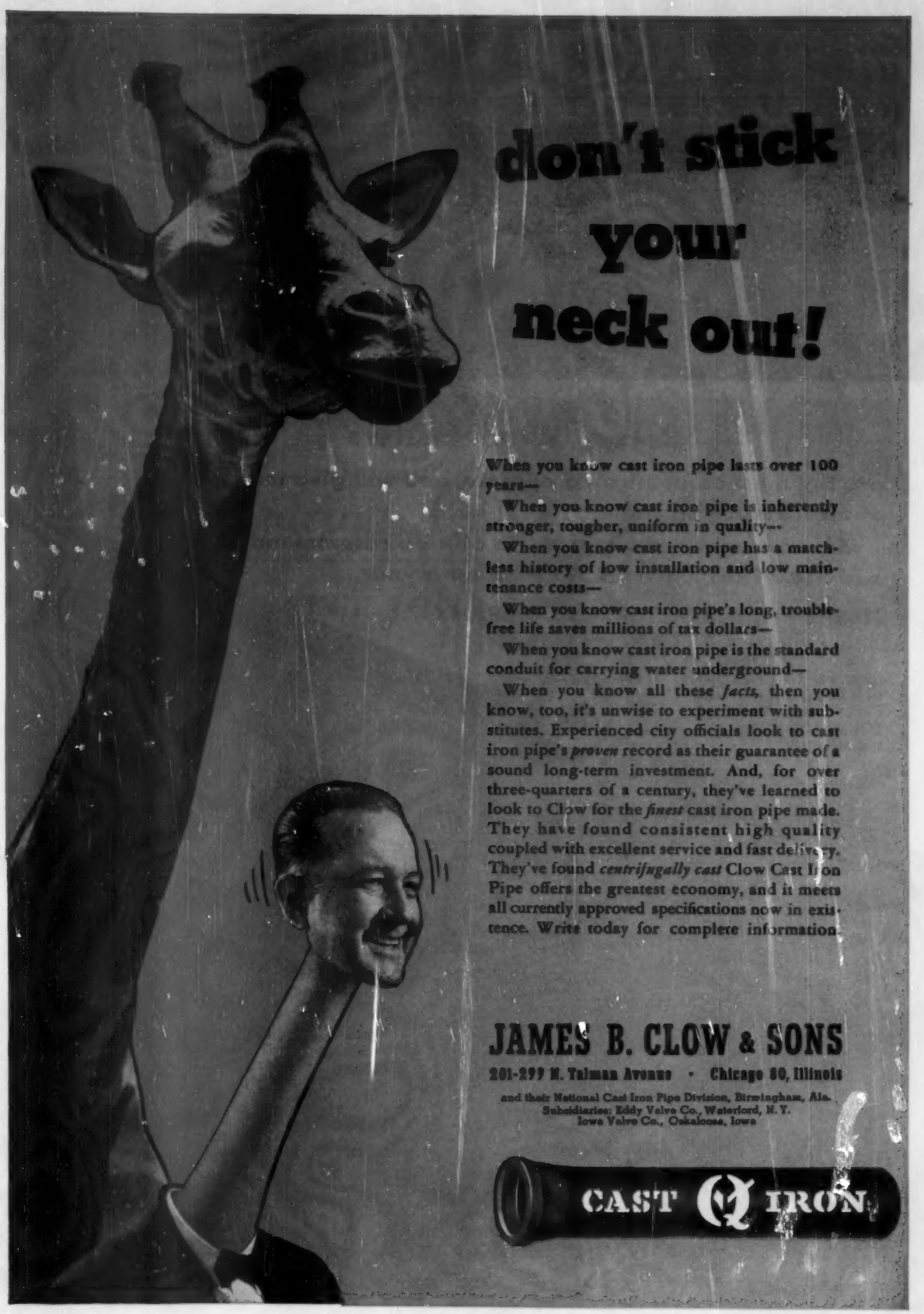


SALIENT FEATURES OF HAR-BAR BARRIERS

1. High enough to stop your car.
2. Low enough to clear your bumper guards.
3. Barrier is above ground—no drainage problem.
4. Barrier is above ground—no rotting of wood.
5. Automatically spaces your cars.
6. Follows contour of your ground.
7. Easily installed—just line up and drive the anchor pins.
8. Easily moved—just pull the anchor pins.
9. Easy to clean under.
10. Easy to maintain.
11. Installed on any kind of surface—black top, cement, macadam, gravel or cinders.
12. It really dresses up your parking lot.
13. You always stop against your tire—no shock.
14. All Castings are aluminum—no rusting.

Send us a plot plan of your parking lot—we do the engineering free.

HARRIS - BARRIER INC. 5407 N. PENNSYLVANIA STREET INDIANAPOLIS 5 — INDIANA


don't stick your neck out!
When you know cast iron pipe lasts over 100 years—
When you know cast iron pipe is inherently stronger, tougher, uniform in quality—
When you know cast iron pipe has a matchless history of low installation and low maintenance costs—
When you know cast iron pipe's long, trouble-free life saves millions of tax dollars—
When you know cast iron pipe is the standard conduit for carrying water underground—
When you know all these *facts*, then you know, too, it's unwise to experiment with substitutes. Experienced city officials look to cast iron pipe's *proven* record as their guarantee of a sound long-term investment. And, for over three-quarters of a century, they've learned to look to Clow for the *finest* cast iron pipe made. They have found consistent high quality coupled with excellent service and fast delivery. They've found *centrifugally cast* Clow Cast Iron Pipe offers the greatest economy, and it meets all currently approved specifications now in existence. Write today for complete information.
JAMES B. CLOW & SONS
201-299 N. Talman Avenue • Chicago 80, Illinois
and their National Cast Iron Pipe Division, Birmingham, Ala.
Subsidiaries: Eddy Valve Co., Waterford, N. Y.
Iowa Valve Co., Oskaloosa, Iowa
CAST IRON

HERSEY

Hersey Water Meters

are the most economical to operate, and will give many years of accurate registration.

More experienced water works officials recommend and use HERSEY WATER METERS each year.

HERSEY MANUFACTURING COMPANY
SOUTH BOSTON, MASS.

Branch Offices:
NEW YORK — PORTLAND, ORE. —
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SAN FRANCISCO —
LOS ANGELES

The Disappearing Act that never fails

A billion-mile network of buried faith lies stretched across America. It's Vitrified Clay Pipe — the product that disappears underground . . . and *has* to be trusted. Clay Pipe is sealed in by streets and sidewalks . . . blocked off by building foundations . . . piled over with earth and rock.

Everybody trusts it, because Clay Pipe has a vital job to do, and it must not fail. Yet — nobody worries about that vast underground network of sanitary protection. Few people even think about it. What greater tribute could be paid to a product's dependability?

Of all the materials that are used in the construction of modern homes and cities, none is more essential than Vitrified Clay Pipe. It disappears underground, so it's got to be good. It guards against disease, so it's got to be good. It gets no maintenance, so it's got to be good.

And you know it *is* good, because it is guaranteed for 50 years. It's the only pipe that *never wears out,* and the Clay Pipe Industry is mighty proud of it.

Vitrified CLAY PIPE

CLAY PIPE NEVER WEARS OUT!

NATIONAL CLAY PIPE MANUFACTURERS, INC.

1520 18th St. N.W., Washington 6, D. C.

206 Connally Bldg., Atlanta 3, Ga.
100 N. LaSalle St., Rm. 2100, Chicago 2, Ill.
703 Ninth & Hill Bldg., Los Angeles 15, Calif.
311 High Long Bldg., 5 E. Long St., Columbus 15, Ohio

C-354-6

SIGNS THAT PREVENT DISASTER

YOU CAN DEPEND ON SIGNS BY MIRO-FLEX

Miro-Flex Stop Signs Are Now Available in Black on Yellow or White on Red, Plain or Reflectorized.

Miro-Flex signs are a sure sign of efficient traffic control and safety. There's dependability stamped into every Miro-Flex sign which assures you that both motorists and pedestrians know *"what you mean."* It's America's finest sign line . . . municipalities, governing bodies and industry have relied upon Miro-Flex for years to supply signs of every nature . . . from street name assemblies and stop signs to highway markers and special-made signs. All Miro-Flex signs conform to standards of the United States Public Roads Administration.

Write for Your Free Copy of "Signs by Miro-Flex"

THE MIRO-FLEX CO., INC.

1824 EAST SECOND ST. WICHITA, KANSAS

OK CHAMPION POWER SEWER CLEANERS

Mounted on perfectly balanced *4-Wheel Chassis*—for greater safety. No lifting over manhole, or pulling away during operation. Safe tandem towing.

All Controls at Working End—keeps operator out of passing traffic, allows full vision of work.

Built-in *Gear Reduction* Ratio—allows better use of power for bucket travel and pulling power.

Fully Automatic *Safety Clutch*—instant acting, avoids damage to tiles or machines.

Slower Speed Engines—air or water cooled—for longer life, greater operating economy.

NEW *Pole-Suspended Guide Wheel*—a special OK Champion feature—lowers easily—keeps men out of manhole. Fits any model OK Champion Power Sewer Cleaner.

Write for latest OK Champion Circular

CHAMPION CORPORATION • 4716 Sheffield Ave. • Hammond, Ind.

FILTER SAND AND GRAVEL

Produced from an inland pit hence free from river contamination and foreign matter.

Shipment in bulk or bagged.

Many of the larger filter plants throughout the United States are equipped with our products.

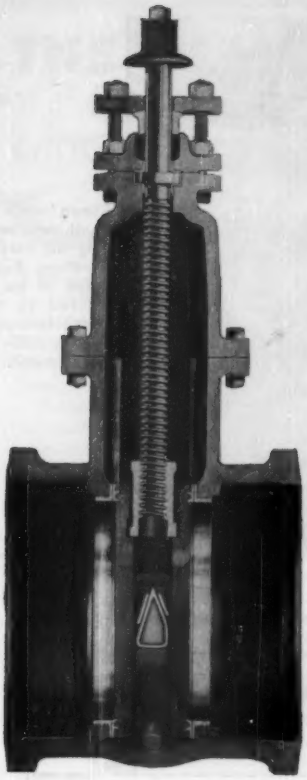
PROMPT SHIPMENT

Inquiries and orders solicited.

NORTHERN GRAVEL COMPANY

Muscatine, Iowa

P. O. Box No. 307 Phone: 4261



Compare

POINT FOR POINT WHEN YOU BUY GATE VALVES

POINTS OF SUPERIORITY

1. Easy to operate—no binding of stem; wedges independent of stem and stem nut can't bind.
2. Stems and stem nuts both solid bronze.
3. Wedges, solid bronze in sizes 10" and larger. Wedges in these sizes have long and short wedging surfaces. Long side insures greater power in closing. Short side, maximum ease in opening.
4. Stuffing box bolts rust-proofed. Nuts bronze.
5. Easy to repack—ample stuffing box depth and diameter.
6. Minimum wear on rings—gates seat, unseat, in "fully closed" position.
7. Parallel, collapsible discs—no sticking in closed position or binding of stem due to tipping.
8. Interchangeable parts—due to precision casting and machining.

This is the valve with the famous Rensselaer wedge mechanism which is responsible for many of its superior operating and maintenance qualities.

When closing, the gates move freely to a position opposite their seats and are then wedged equally and firmly against the seats. The wedges are independent of the stem nut. No damage to threads, no binding, bending or misalignment. When opening, the first turning motion of the valve stem unlocks the wedges, and the gates swing free for easy, fast and complete opening.

Other superior qualities of this valve are given at the left and the Rensselaer Bulletin No. A gives a detailed description of the widely used A.W.W.A. type, and other types from 35 to 800 non-shock W.P. Special types for horizontal installations and the square bottom type recommended for frequent operation and for throttling purposes.

Rensselaer has developed a complete line of mechanisms for operation by hand, air, oil or water and electrical operation with many types of automatic control.

It costs more to dig up a valve, than to be sure that the valve is right in the first place. Thousands of these valves have been in service for more than fifty years. In many cases, "forgotten" valves that had never been closed for 25 to 40 years were "discovered" and found to be drop-tight.

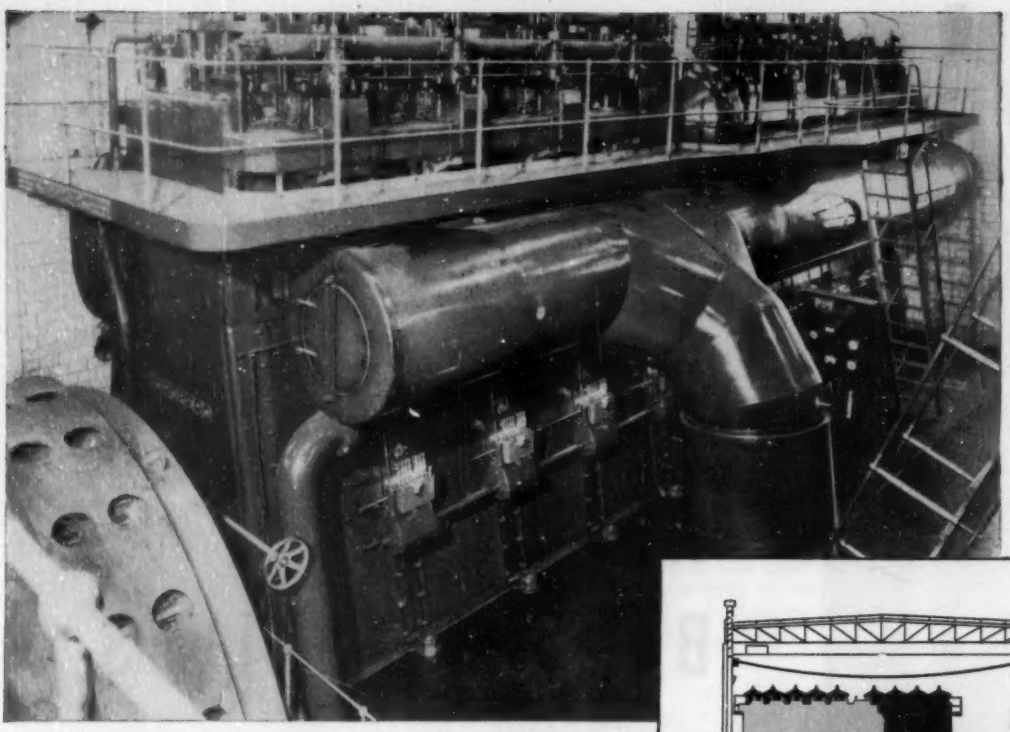
Ask for Bulletin No. A and a list of the cities in your state which have standardized on Rensselaer.

O-RING SEAL AVAILABLE UP TO 12" SIZES 107

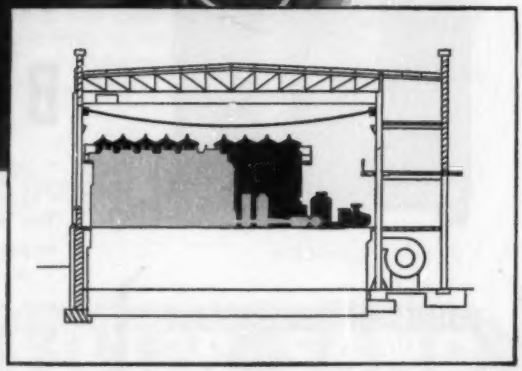
Rensselaer VALVE CO. TROY, N. Y.

GATE VALVES • FIRE HYDRANTS • SQUARE BOTTOM VALVES • CHECK VALVES • AIR RELEASE VALVES

SALES REPRESENTATIVES IN PRINCIPAL CITIES



Shown here is the fourth large, heavy duty oil burning Nordberg 2-cycle Diesel to be installed in the Grand Haven plant . . . a 7000 hp, 5000 kw unit.



Outstanding economy and reliability of NORDBERG two-cycle DIESELS proved in 15 years of Municipal Power Expansion

Experience of the City of Grand Haven, Michigan, is evidence of the ability of Nordberg Diesel Engines to meet ever-increasing power requirements.

Starting over fifty years ago with a modest steam engine plant, Grand Haven has progressed through turbines, smaller internal combustion engines, and, in the last 15 year period, to the use of large Nordberg 2-cycle Diesels, ranging from 2250 to 7000 hp, as their main power supply. Their recent selection of a fifth Nordberg unit provides further proof of the outstanding reliability of these low speed, heavy duty engines.

It is important to note that the established economy of Nordberg Diesels is further enhanced in the Grand Haven plant through their ability to operate efficiently and economically on heavy, straight-run residual fuel oils. Operating records, covering over a year's operation show, for example, that the 7000 hp Nordberg Diesel has been producing power for an impressive 14.16 kwh/gal. of fuel.

This is another good example of the varied power problems being solved better, more economically with Nordberg Diesels.

MODERN DIESEL POWER GREATLY INCREASES PLANT CAPACITY

Not only has modern Diesel power brought excellent fuel economy to Grand Haven, but it has also given the plant six times as much power installed in a given building section.

The expansion that provided room for the last Nordberg engine, a 7000 hp unit, is almost identical in area to that occupied by any one of the three original 1140 hp Diesel engines.

NORDBERG MFG. CO.
Milwaukee, Wisconsin

NORDBERG

DIESEL • DUAFUEL® AND SPARK-FIRED GAS ENGINES

P955

THE "ALL AMERICAN" CITY

CANTON, OHIO CHOOSES "Flexibles" OF COURSE

Last year Canton was named an "All America" City by the National Municipal League and LOOK Magazine, being one of 11 cities so designated during 1953. It received a merit certificate for outstanding achievement in city government among other honors and recognition.

Naturally, like other modern, well-run cities, Canton uses and endorses "Flexible" sewer cleaning equipment. Pictured is one of its "Flexible" Bucket Machines in the process of getting a sizeable heap of mud and other obstructions out of a typical sewer manhole. Floyd Walters is operating, Ralph Swinehart is dumping the bucket, Don Skotnicky is standing by. They are working in safety and with dignity above ground on the street level... instead of "in the sewers," as was required of sewer maintenance crews in the years "Before Flexibles."

"Flexibles" cut sewer cleaning costs—permit preventative maintenance to be carried out—operate in all weather. There is a model for every need. We invite the opportunity to give your city an "on the job demonstration."

Write for our **FREE** *Catalog*

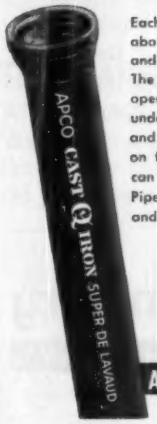
Flexible SALES CORPORATION

3786 Durango Ave., Los Angeles 34, Calif.

(DISTRIBUTORS IN PRINCIPAL CITIES)

AMERICA'S LARGEST LINE OF PIPE CLEANING TOOLS AND EQUIPMENT

TESTED AND RECORDED



Each length of pipe we manufacture passes through the above hydrostatic test press where it is filled with water and the pressure raised to 500 pounds per square inch. The most common water works pipe is designed for an operating pressure of 150 pounds per square inch. This undergoes the 500 pounds per square inch hydrostatic test and permanent records for each piece of pipe are kept on file for inspection by our customers at all times. You can be assured with Alabama's Super De Lavaud Cast Iron Pipe. In sizes of 3" to 24" in modern long lengths. Bell and Spigot, Mechanical Joint and Flanged Pipe.

General Sales Offices

ANNISTON, ALABAMA

We Invite Inquiries to Our Nearest Sales Office

120 S. Michigan Ave. Chicago, Illinois

350 Fifth Avenue New York 1, New York

ALABAMA PIPE COMPANY

ANNISTON ALABAMA

UNITED

UNANIMOUS CHOICE

Of Municipalities For Every Sanitary Need

UNITED

WASTE RECEPTACLES

By overwhelming choice, UNITED gets the vote of forward-looking communities because of:

long range economy • sturdy construction • durable performance

ROUND TOP RECEPTACLES

Wherever modern decor demands a functional and attractive receptacle the new Round Top is TOPS.

SWING TOP RECEPTACLES

For thoroughfares, public buildings, parks, schools—wherever sturdy, safe, dependable efficiency is essential.

SANITARY NAPKIN DISPOSAL RECEPTACLES

Eliminate clogged drains. Foot pedal operated. Galvanized steel inner container is easily removed for emptying. Practically air-tight when closed.

Write for Catalog

UNITED METAL BOX CO. INC.

BROOKLYN 15, N. Y.

UNITED West Coast Distributor: SHORELINE METALS UNITED

Mayor Louis Mills and Aldermen Van Fleet watch demonstration of new snow blowing machine on city park lake.
Inset: Mayor Louis Mills

THE MAYOR SETS THE PACE...
for Municipal Sales

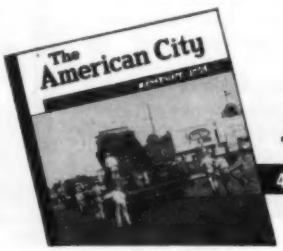
WHEN cities and towns improve their streets, or rebuild their water and sewerage facilities, some individual leads the way. This "doer" is usually the Mayor, or the City Manager where that form of government is in force.

Mayor Louis Mills of Middletown, New York (population 22,586) is such a man. He writes, "Not only has THE AMERICAN CITY aided me and my department heads in keeping abreast of developments in municipal management, but on at least several occasions it has led either directly or indirectly to contracts let or purchases made by our City."

The leader has to battle for modernization. If he wants new street lights, more park equipment, or a new fire engine, he has to prove the need to the people. Equipment is then bought to do the job.

Progressive Mayors and City Managers always look for facts to support their improvement plans. After reading THE AMERICAN CITY they can say, "This is how Stamford did it. There are a lot of manufacturers who make the equipment that can do the job in our town." Do these leaders know about your product? Sell the municipal market by telling the leaders through THE AMERICAN CITY.

The American City | Contractors and Engineers | The School Executive



The American City
470 Fourth Avenue, New York 16, N.Y.

Announcing

ORTHOSOLV*

...the Emulsifiable Orthodichlorobenzene

For Suppressing Objectionable Odors!

For Effective, Efficient, Economical Deodorizing of

- LAND FILLS
- SEWAGE PLANTS
- DRAINAGE DITCHES
- STORM SEWERS
- MARKET AREA STREETS
- REFUSE CANS and TRUCKS

. . . or wherever you've got an objectionable odor problem!

Can Be Used With:

- STREET FLUSHERS
- PRESSURE PUMPS
- HAND SPRAYERS

Now available for the first time—*at a practical price*—an orthodichlorobenzene that is readily emulsifiable in water!

ORTHOSOLV is the simple, inexpensive way to overcome complaints resulting from temporary or regular odor conditions. Mix ORTHOSOLV and water in proportions as dilute as 1 part ORTHOSOLV to 100 parts of water.

ORTHOSOLV is simple to prepare—just mix with water and it's ready for use. A solution of ORTHOSOLV can be applied by unskilled labor without any special equipment, experience or knowledge. Most localities can use their present equipment without making any large initial investment.

For Tar and Grease Removal

ORTHOSOLV is an efficient solvent for tars and greases. Can be used to clean equipment and garage floors. ORTHOSOLV is easily removed by flushing with water or steam-jennies.

TEST SAMPLES AND LITERATURE AVAILABLE AT NO COST OR OBLIGATION!

Write today for complete details on how ORTHOSOLV can quickly, easily and economically rid your community of odor problems.

*Trade Mark

SOLVAY

ORTHOSOLV

Allied Chemical

GET ALL THE FACTS—MAIL COUPON NOW!

SOLVAY PROCESS DIVISION, ALLIED CHEMICAL & DYE CORPORATION
61 Broadway, New York 6, N. Y.

Gentlemen: Please send me the following:

☐ FREE TRIAL SAMPLE OF ORTHOSOLV
☐ Complete information and prices on ORTHOSOLV

Name_____

Company_____

Position_____

Address_____

City_____ Zone____ State_____

DO-8

791

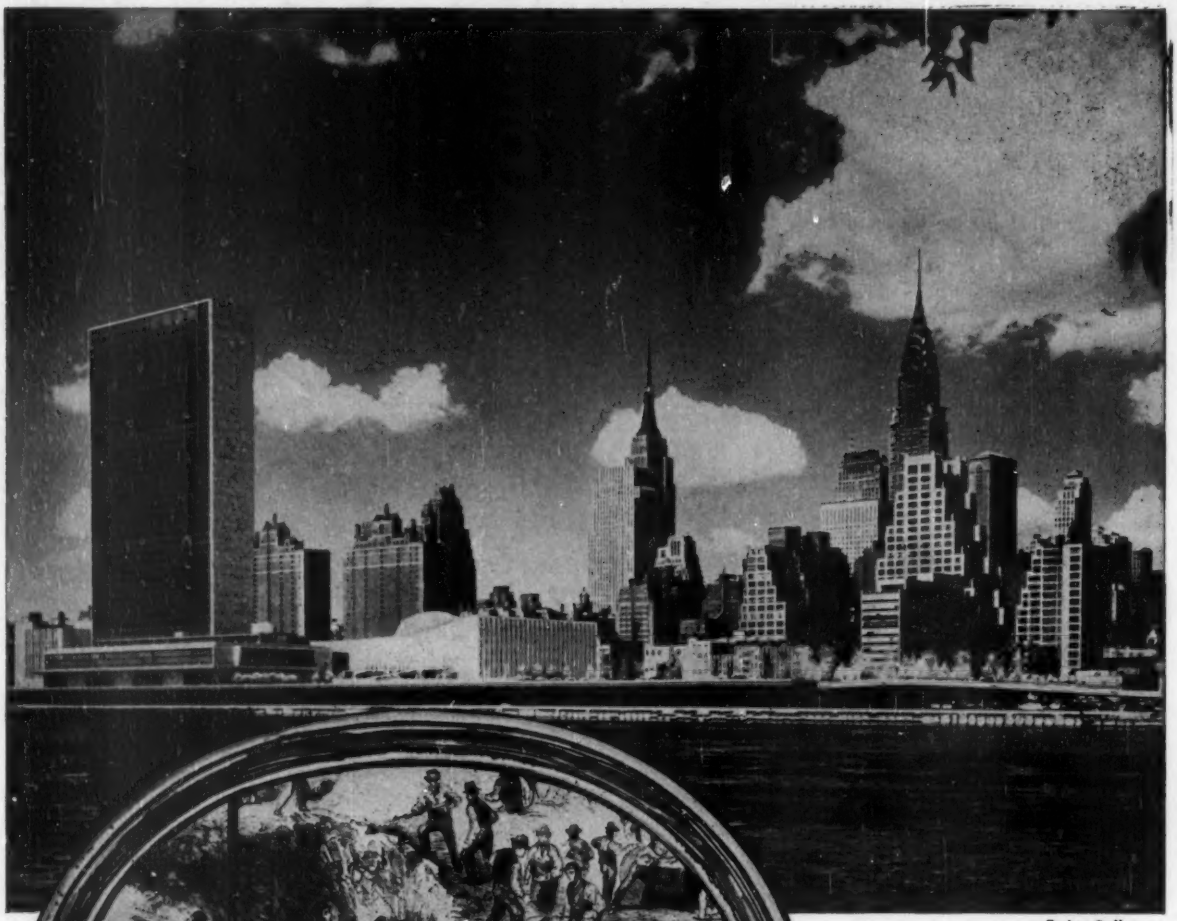
THE cropless wastes of America's once-fertile Southwest have proved it again . . . water makes the difference between food and famine! Today, just to have water to drink, thousands of farmers and ranchers must haul water from nearby towns. With water supplies so low, Badger meters are almost as vital as the water itself. They provide a precise check on usage and waste . . . assure a fair allotment of the water available . . . and help water departments get a fair price for water and service. Thus, Badger meters help keep waterworks self-supporting for thousands of communities. And they operate dependably, economically, with a minimum of servicing.

Badger Water Meters

Badger Meter Mfg. Co. • Milwaukee 45, Wisconsin

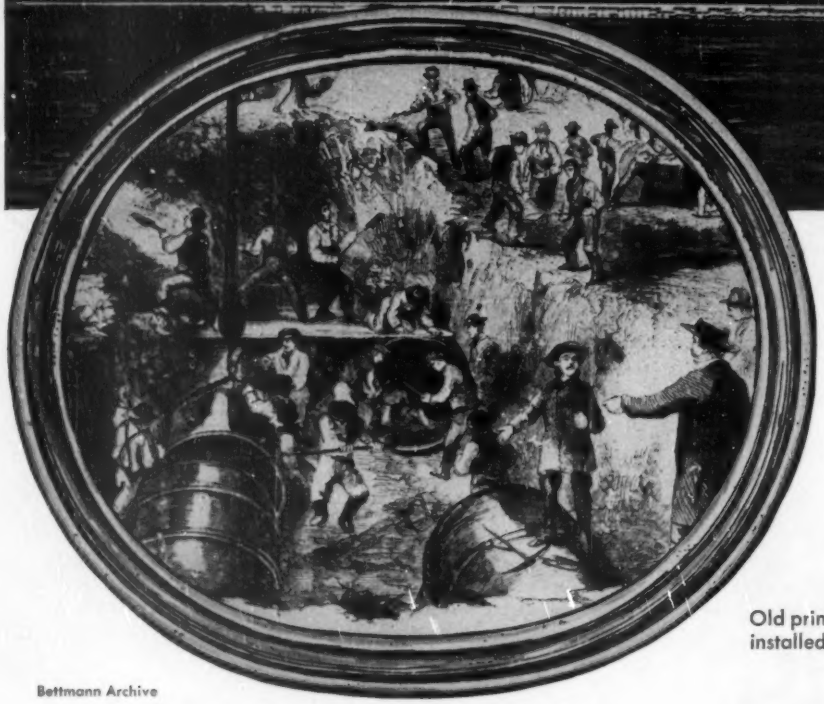
"Measures the water of the world"

With 100 years



Ewing Galloway

This is New York, as seen from East River, showing Empire State, Chrysler and United Nations buildings.



Bettmann Archive

Old print showing cast iron water mains being installed in New York about 100 years ago.

MODERNIZED cast iron

of EXPERIENCE . . .
they must be right

NEW YORK installed cast iron water mains 100 years ago . . . and installs them today!

One hundred years ago, New York was a city of about 750,000 population, served by 237 miles of water mains. Today's eight million population requires 5500 miles of mains, of which 98% are cast iron. Some of these mains are still functioning after a century and more of service. From 90 M.G.D. a century ago, capacity has grown to 1500 M.G.D.

A customer who buys your product year after year—generation after generation—is a "jewel beyond price". Be you merchant or manufacturer, you might count such customers on the fingers of your two hands. Yet, the cast iron pressure pipe industry can count more than 60 of them—utilities that have been buying cast iron pipe for water or gas mains (or both) for 100 years.

Cast iron pipe has been a rugged, long-lived product from the earliest days. Today's *modernized* cast iron pipe, centrifugally cast, is even stronger, tougher, and more uniform in quality. And, where needed and specified, it is centrifugally lined with cement mortar to assure sustained carrying capacity throughout the long life of the pipe.

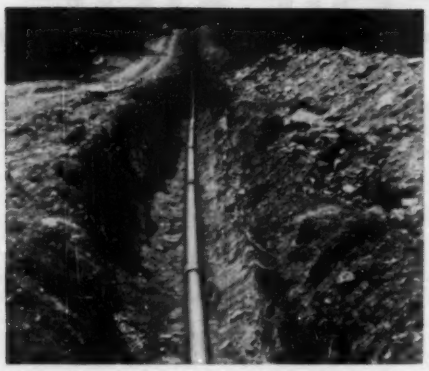
Cast Iron Pipe Research Association, Thos. F. Wolfe, Managing Director, 122 So. Michigan Ave., Chicago 3.

CAST Q IRON ®

The Q-Check stencilled on pipe is the Registered Service Mark of the Cast Iron Pipe Research Association.

In good condition after 100 years of service, this cast iron distribution main is one of several still functioning in New York City.

pipe FOR MODERN WATER WORKS OPERATION



"Century" Pipe installation, Brookwood Estates, Stanhope, N. J.

PERMANENT STRENGTH

"CENTURY"® PIPE

as its name suggests, retains its great strength for generations. One reason is that the materials used to make it (asbestos fiber and portland cement) are themselves inherently strong and durable. Secondly, K&M maintains rigid quality control throughout the manufacturing process. To be certain of high strength and uniformity of construction, K&M tests every length, both hydrostatically and in flexure, before it leaves the plant. "Century" pipe has proved its strength by long service in many kinds of soil.

Consider the many other distinct advantages of "Century" pipe and you'll see why more and more thrifty towns are choosing it—why it's the wise choice for your community too!

Write for further information now.

QUALITIES THAT MAKE "CENTURY" PIPE ECONOMICAL, TROUBLE-FREE, LONG-LIVED

1. NON-TUBERCULATING
2. NON-CORROSIVE
3. PERMANENT STRENGTH
4. DURABLE
5. IMMUNE TO ELECTROLYSIS
6. TIGHT JOINTS
7. SMOOTH BORE
8. EASILY, QUICKLY LAID
9. LIGHT WEIGHT
10. LOW COST

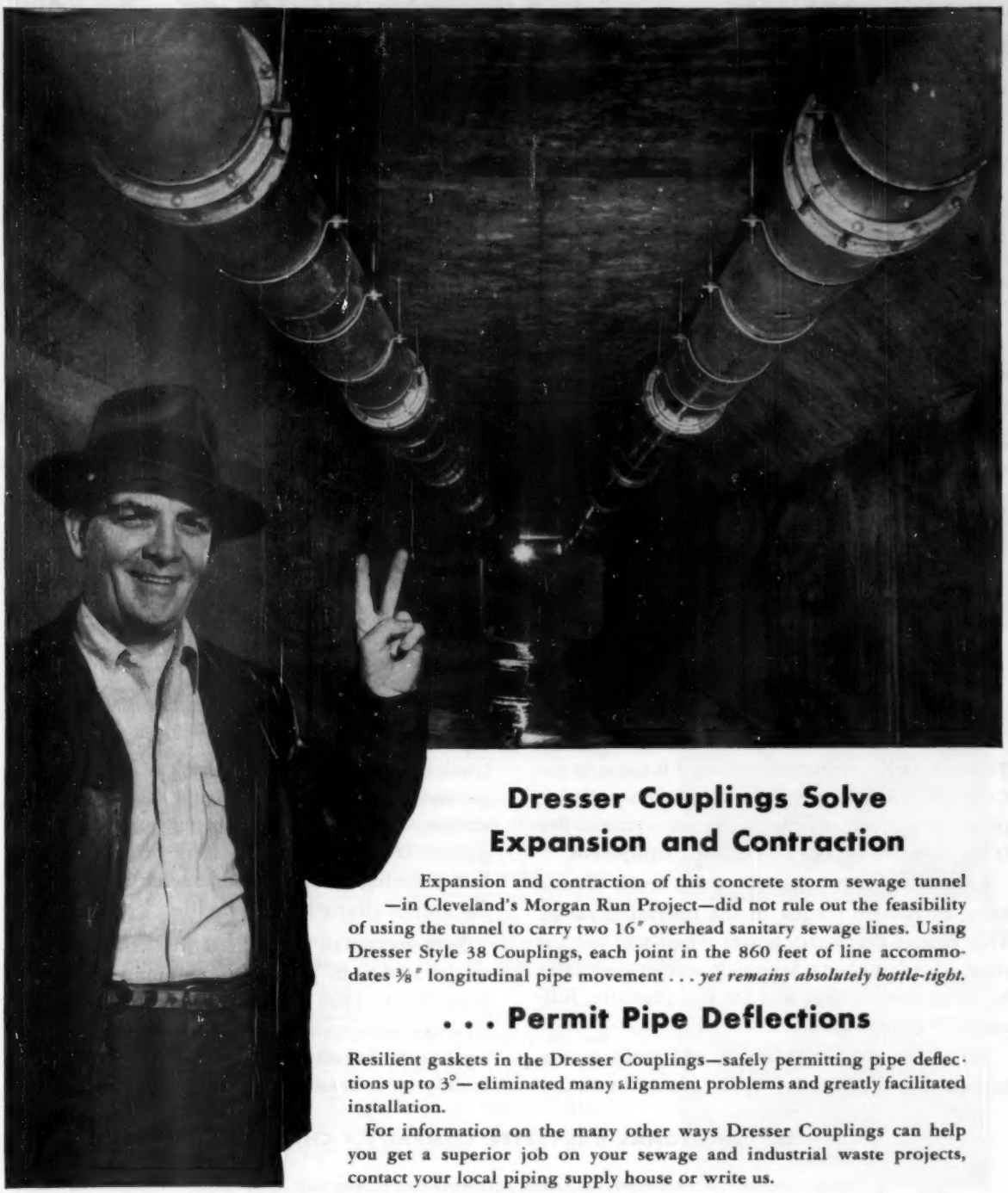
"Century" pipe meets the A.W.W.A., A.S.T.M. and Federal Specifications for asbestos-cement pressure pipe.

KEASBEY & MATTISON COMPANY • AMBLER • PENNSYLVANIA

K&M best in asbestos ®

Nature made asbestos . . . Keasbey & Mattison has made it serve mankind since 1873

DOUBLE-TIGHT!



Dresser Couplings Solve Expansion and Contraction

Expansion and contraction of this concrete storm sewage tunnel —in Cleveland's Morgan Run Project—did not rule out the feasibility of using the tunnel to carry two 16″ overhead sanitary sewage lines. Using Dresser Style 38 Couplings, each joint in the 860 feet of line accommodates ⅜″ longitudinal pipe movement . . . *yet remains absolutely bottle-tight.*

. . . Permit Pipe Deflections

Resilient gaskets in the Dresser Couplings—safely permitting pipe deflections up to 3°— eliminated many alignment problems and greatly facilitated installation.

For information on the many other ways Dresser Couplings can help you get a superior job on your sewage and industrial waste projects, contact your local piping supply house or write us.

DRESSER® **COUPLINGS**

Dresser Manufacturing Division, 69 Fisher Ave., Bradford, Pa. (One of the Dresser Industries). Warehouses: 1121 Rothwell St., Houston; 101 S. Airport Blvd., S. San Francisco. Sales offices also in: New York, Philadelphia, Chicago, Toronto.

Fire Fighting POWER

INTERNATIONAL Model R-306 fire truck chassis recently purchased by the Borough of Windber, Pennsylvania, shown with complete fire-fighting equipment, including 1,250 GPM pump, ladders and hose. GVW rating, 30,000 lbs. Wheelbase, 169 inches. Engine, 266-hp. gasoline.

You get an extra measure of what it takes to get to fires fast—and to develop maximum pumping pressure—when you choose INTERNATIONAL fire truck chassis for your fire-fighting equipment.

INTERNATIONAL *specialized* fire truck chassis have extra-high torque in the operating range. This means maximum power when you need it most—for fast starts, for quick acceleration after turns or slow-downs, and for full-pressure, full-capacity pumping.

Many other special features add performance, stamina, and efficiency to INTERNATIONAL fire truck chassis. They have set-back front axles and geometrically perfect steering for easy maneuverability, 12-volt electrical system, chrome manganese frames, extra-capacity brakes, extra-heavy springs—special components everywhere for utmost strength and long life.

INTERNATIONAL specialized fire truck chassis are available in 7 models—pumping capacities from 300 to 1500 GPM. Other INTERNATIONAL chassis may be coordinated to provide fire-fighting equipment for all requirements. Get full details from your INTERNATIONAL Dealer or Branch.

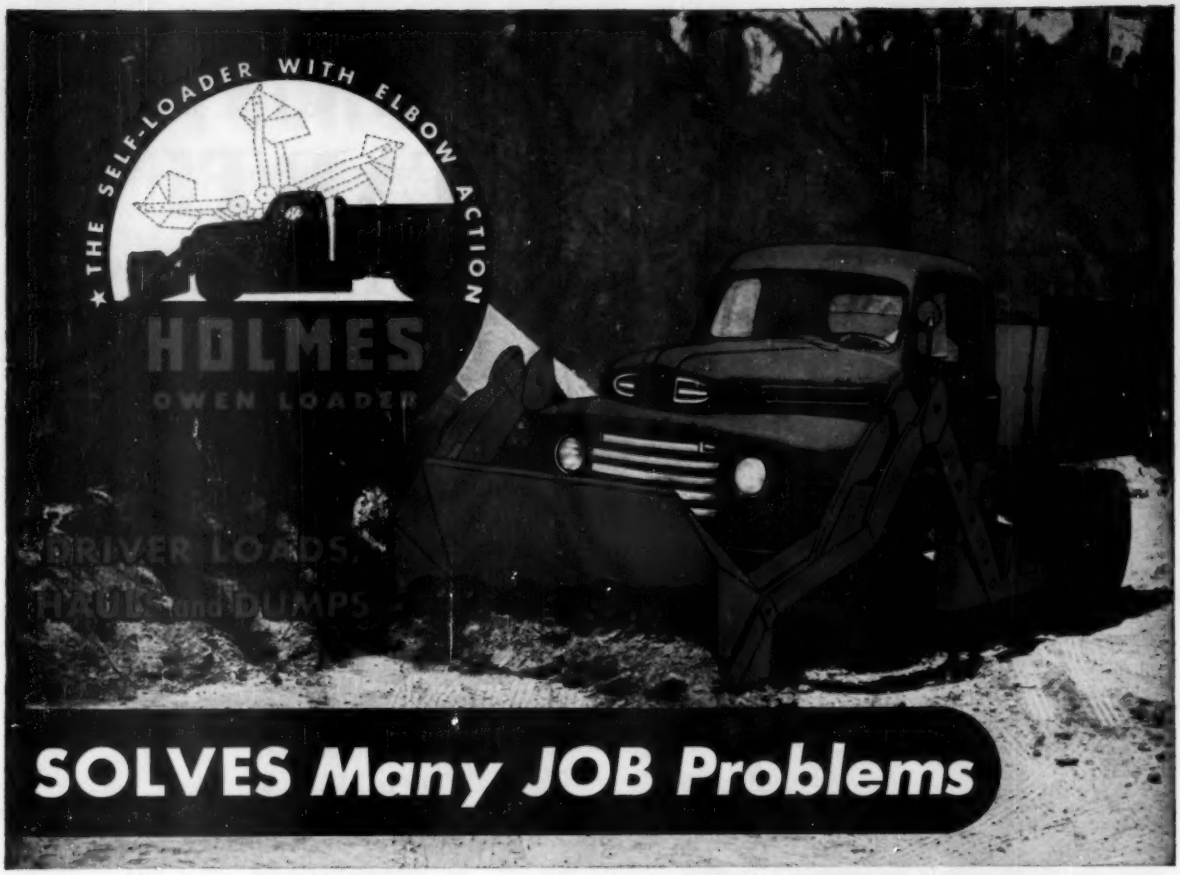
INTERNATIONAL HARVESTER COMPANY • CHICAGO

International Harvester Builds McCormick® Farm Equipment and FARMALL® Tractors...Motor Trucks...Industrial Power...Refrigerators and Freezers

Better roads mean a better America

INTERNATIONAL TRUCKS

"Standard of the Highway"



VERSATILE ONE-MAN OPERATION
SAVES Time - Manpower - Equipment

The new Holmes-Owen Loader offers a very practical solution to many of the problems which state, county and city officials are now facing in providing increased community services.

The new self-loader provides the answer to such problems, for this equipment converts the usual dump truck into an independent working unit capable of performing a wide variety of work. It saves time, labor and the use of more costly equipment by permitting the truck driver to do his own light digging, grading, loading, and cleaning-up.

A dump truck with such versatile one-man operation can easily do the work of several men, thereby drastically cutting the cost of many jobs, such as: the handling of various stock pile materials, removal of debris, trash, snow, etc., cleaning-up of streets, intersections, parkways, etc. Let us show you how a Holmes-Owen Loader will solve your work problem. Ask your equipment dealer for details or write factory direct.

Manufactured by

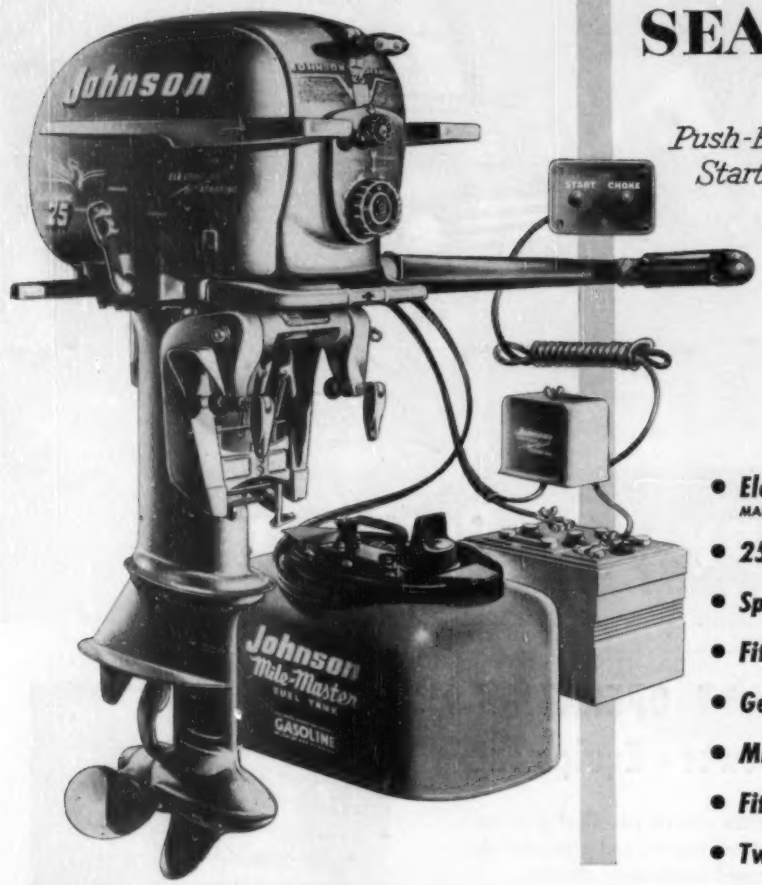
Developers of HOLMES WRECKER Equipment

DRIVER controls digging and loading operation from cab.

One-man operation speeds up LOADING, HAULING and UNLOADING.

ERNEST HOLMES COMPANY, Chattanooga, Tenn.

New! ELECTRIC STARTING SEA-HORSE 25



Push-Button Starting

- **Electric Starting!** — ALSO EQUIPPED FOR MANUAL STARTING
- **25 Horsepower!**
- **Speeds over 30 mph!**
- **Fitted for Ship-Master Remote Control!**
- **Gear Shift!** FORWARD-NEUTRAL-REVERSE
- **Mile-Master Fuel System!** 6 GALLONS
- **Fitted for Fuel-Master Supply System!**
- **Twist-Grip Speed Control!**

Johnson
SEA-HORSE
OUTBOARD MOTORS

Talk about the "automatic outboard." This is IT! Here is everything that has made the Sea-Horse 25 sensational — PLUS JOHNSON-ENGINEERED ELECTRIC STARTING!

It spins into action at the first touch of the starter button (still equipped for manual starting, too). In fact, this great motor is engineered so that you can choke, start, shift, throttle, steer, and stop *without leaving your seat up front!* In addition to the 6-gallon Mile-Master Fuel System (standard equipment), it's fitted for Johnson's amazing new Fuel-Master Supply System, for *extra-long* cruising range — and Ship-Master Remote Control, for shift-and-throttle operation.

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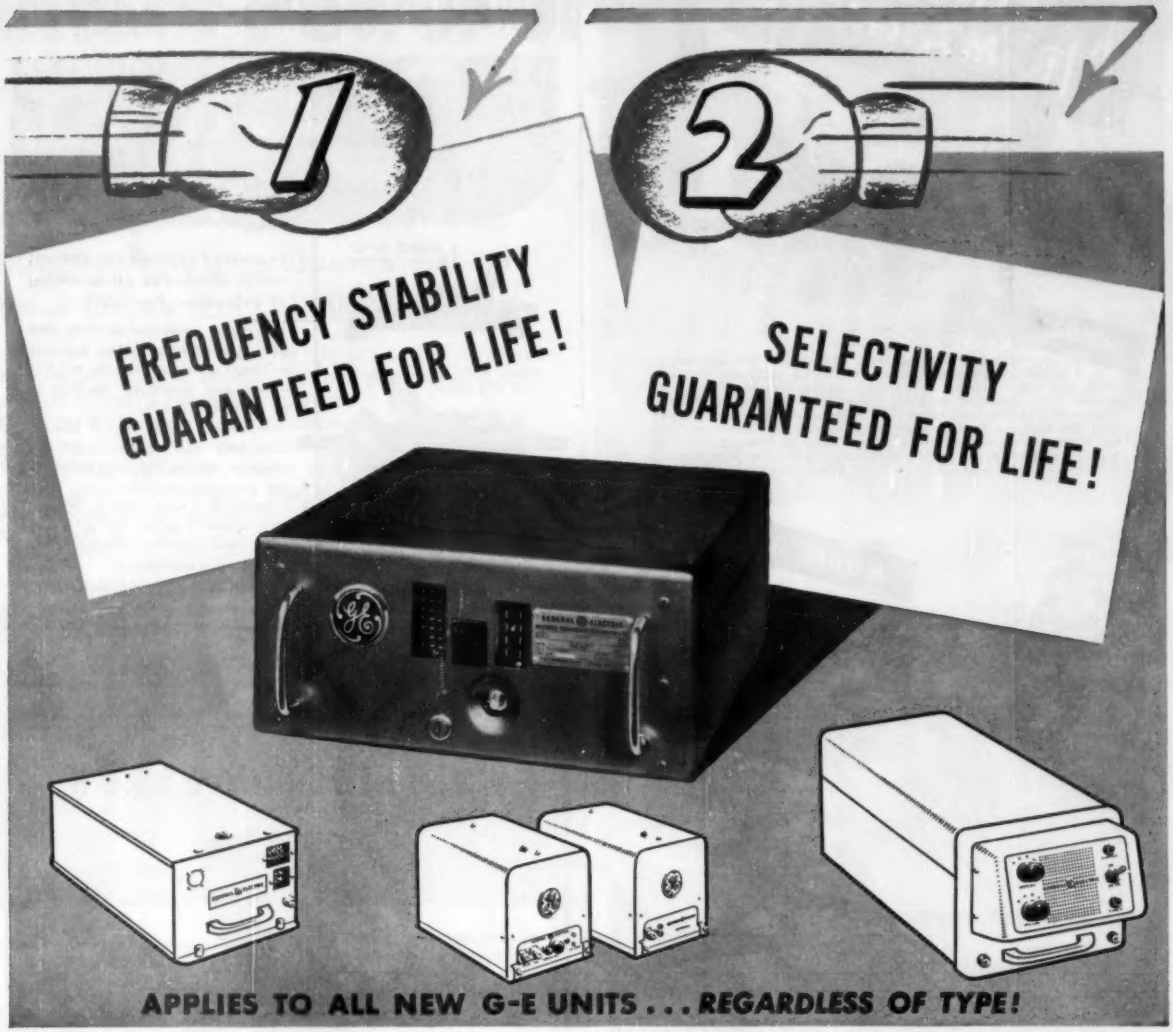
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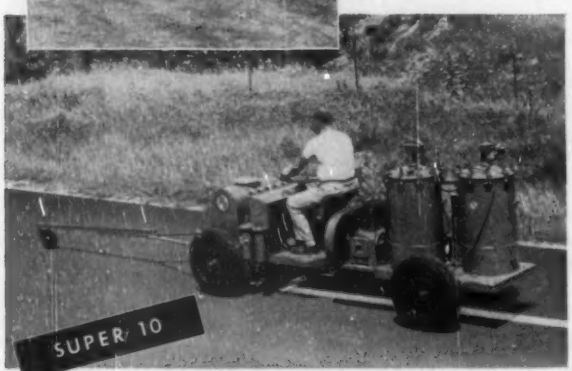

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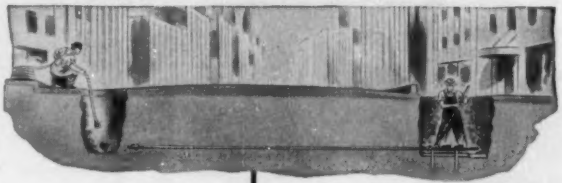

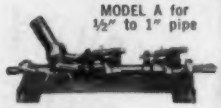

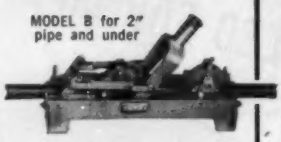

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and does each superlatively well thanks to A-W's exclusive All-Wheel Drive and All-Wheel Steer

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All-Wheel Drive provides 30% more Power-at-the-Blade; keeps the front end of the grader under control at all times. All-Wheel Steer makes the grader twice as maneuverable. Rear Steer shifts the rear truck from side to side, for better traction and smoother operation.

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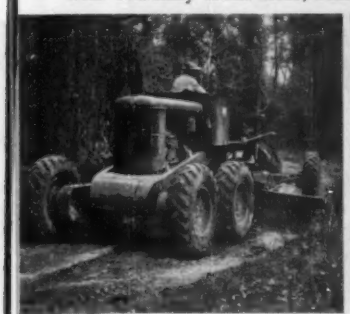
2 Six powerful driving wheels provide maximum flotation in soft or sandy soils.



3 Blading in reverse is very much easier with All-Wheel Steer.

4 Fingertip hydraulic rear steer makes it easy to maneuver around obstructions.

5 All-Wheel Drive holds machine and blade steady on rough, badly eroded banks.

6 No tire marks on this wide shoulder, thanks to rear steer

7 Controlled traction moves big windrows, farther and faster.

8 Live power in front drivers makes it easy to ride steep banks, when finishing.

9 Rear steer helps the blade do a fine job of gravel maintenance.

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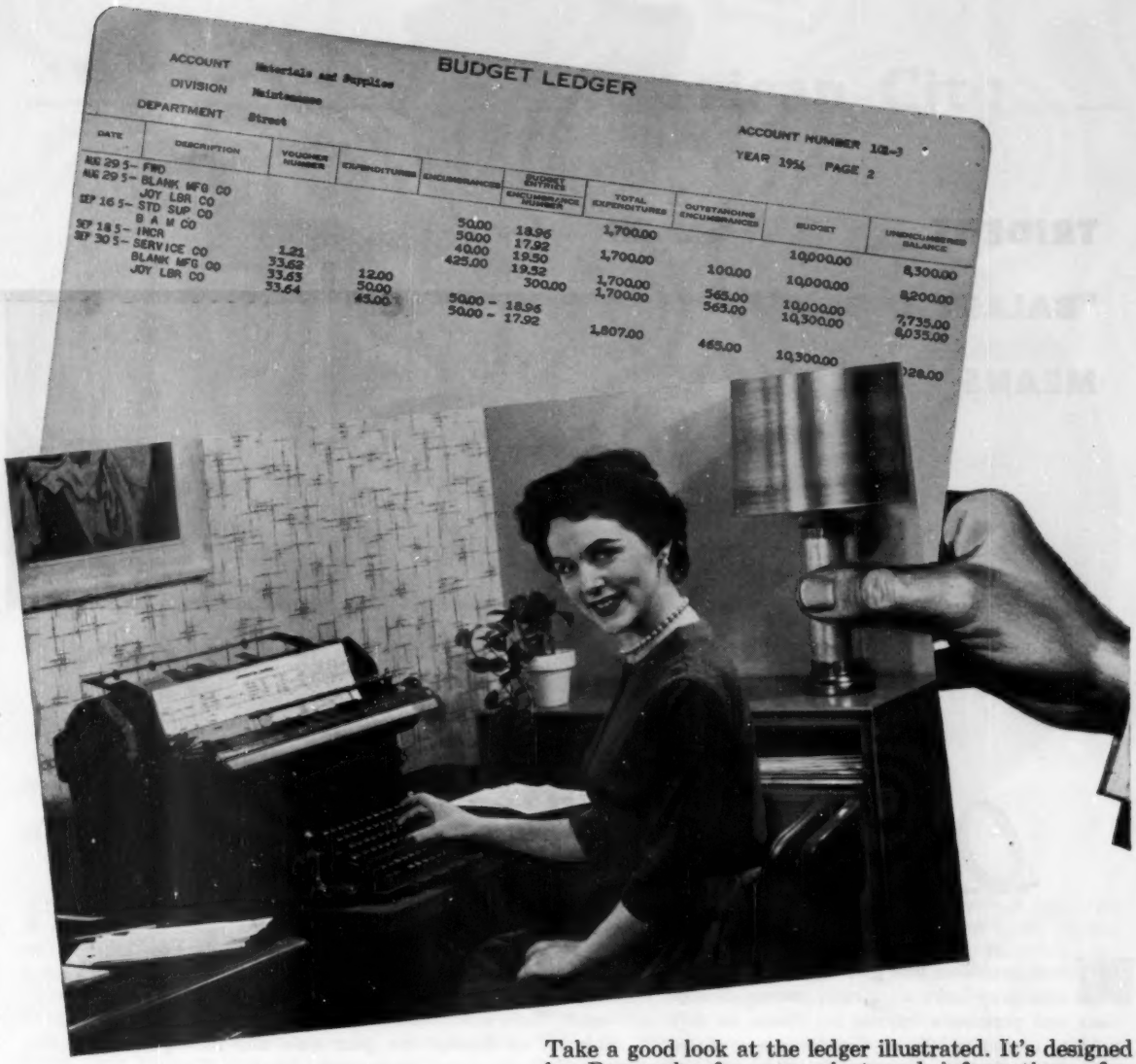

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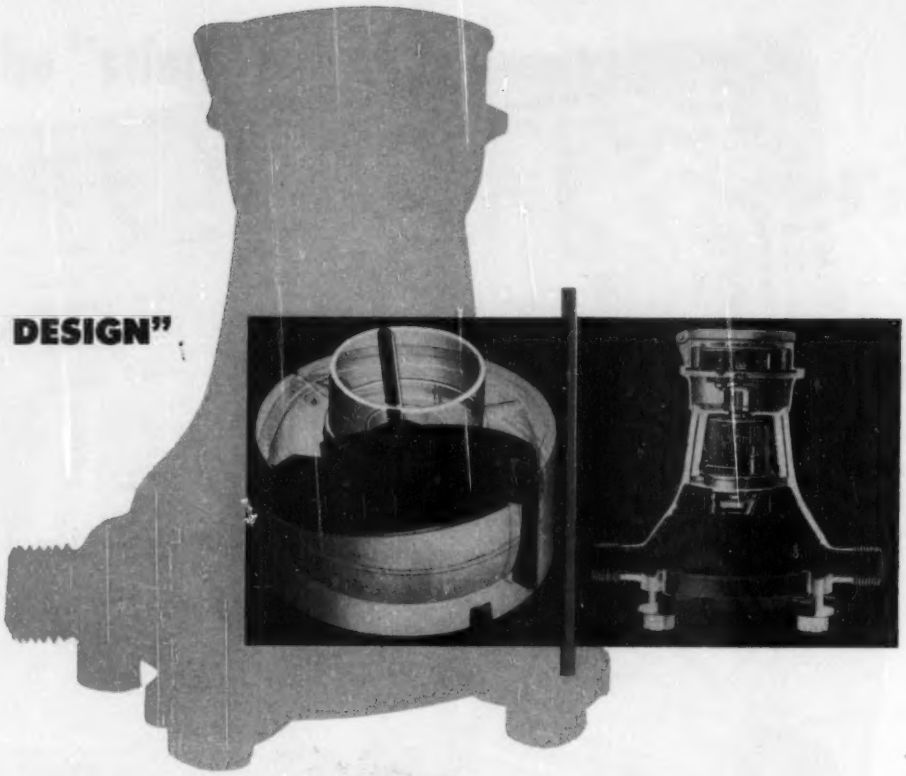

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Three problems that give meter superintendents gray hairs . . . noisy meters, broken discs and premature failures . . . have as their primary causes turbulence, interference, and improper motion of the disc piston. Here's how Trident meter's "balanced design" eliminates these faults:

The Trident disc is axially controlled. The thrust roller . . . a Neptune "first" . . . guides the disc in the exact path necessary for smooth, balanced flow of the water. No sloppy or eccentric motion to cause noise, disc breakage or excessive wear. Inlet and outlet ports, and the casing itself are carefully designed for smooth, uninterrupted flow of water. There is no turbulence caused by water circulation up through the gear train and stuffing box . . . these are permanently lubricated and sealed from the path of the water.

We believe the Trident meter, if properly installed, is the quietest, most dependable meter you can buy. It's one of the many reasons why more Trident meters have been bought in the past 50 years than any other meter.

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Reclamation of a Water Reservoir

Shawnee, Okla., uses good soil conservation principles to save its water reservoir

By W. B. MORAN
City Manager
Shawnee, Okla.

IF MUNICIPAL officials knew more about rural land problems, they could save themselves many headaches and their cities a wad of money. This is particularly applicable to the numerous little cities that have built costly reservoirs in the past 25 to 30 years, only to learn that their man-made lakes had become or soon would become useless because nature-made laws had been violated.

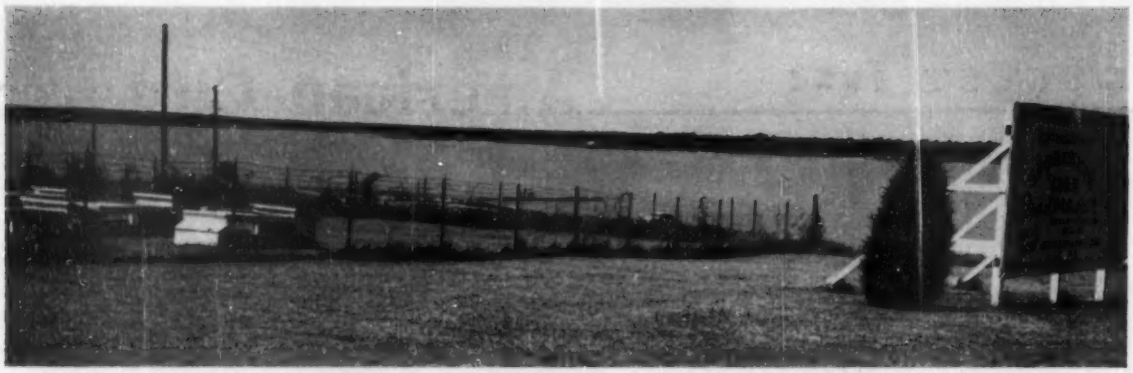
The solution of such a problem is neither complex nor expensive. Our city is a case in point. Shawnee, a central Oklahoma city with a population of 32,000, built an $800,000 reservoir in 1936. The lake, intended to serve for recreational purposes, also was supposed to produce revenue required to finance other city services.

But things didn't work out as the city had hoped. With the first rain, the disappointments began. Not only did the land in the 13,000-acre watershed erode, but the city-owned 1,600 acres, which was part of the watershed and encircled the reservoir, also washed away. Every time it rained, Oklahoma's red soil washed down into the lake in carloadfuls.

Sand bars were forming where streams entered the lake, and sediment was piling up at many points along the shore, leaving private boat landings high and dry. Sheet and gully erosion in the watershed became serious indeed.

Moreover, the red soil washing

Two children sit on an old boat landing destroyed by a 10-foot-high silt bar on lakeshore. (Above) One of 79 desilting basins that catch runoff from healing gullies. (Below) The fingering gullies that used to pour soil into Shawnee Lake begin to heal.



Headquarters area at Shawnee Lake. The Pottawamie Sportsmen's Club, one of many organizations cooperating with the city in its conservation project, raises quail in pens (left). Birds are distributed each year to cooperating farmers in the watershed.

into the lake remained in suspension, making the water surface ugly and the task of filtering the water difficult and costly. No amount of treatment could remove the discoloration of the water that was piped to homes and businesses.

The dirty red-colored water of the lake was repulsive to fishermen, and only a handful of the residents who had leased the city's lake sites had proceeded with plans to build cabins. People were in earnest when they referred to the lake as the "mud hole."

Today, Shawnee Lake sparkles like a gem in the sun and moonlight. Cabins, more like beautiful summer homes, dot the shoreline. Thousands throng to the lake for recreational activities; and the water that is piped to homes and businesses is clear. The city again takes pride in its lake.

The program that accomplished this miracle was begun in 1950. At that time, a group of us, concerned with the liability that the reservoir had become, met with Roland E. Lee, head of the local office of the Soil Conservation Service, and mapped out a corrective program. Then we took the matter up with the City Commission and *demanded* support of the program. To my surprise, they approved the program and appointed me as city manager. I have never regretted accepting the responsibility.

The most important feature of the city's conservation program has been seeding the land to grass to give the soil a thick, protective blanket, which offers protection against the eroding force of rain. The long grass roots guide the rain deep into the soil where it is stored and released slowly and evenly so that the water level of the lake remains stable.

Also, the rain that runs off the surface of the land is relatively clear when it reaches the body of water. As the conservation work proceeds, this runoff will continue to decrease and will carry less and less sediment into the lake until siltation becomes negligible.

Another feature of the over-all program is the construction of 79 desilting basins near the gully bases which will take a long time to heal. The sides of the gullies have been sloped and seeded to grass. Above the gullies, 12 miles of diversion terraces have been built which will keep the water from flowing into the gullies.

The Desilting Basins

The desilting basins, which are really small ponds, catch the soil-laden runoff from the healing gullies. Sediment settles in the bottoms of the basins. Above a certain level in the basins, water flows over a grassy spillway that sifts the sediment before it reaches the lake. By the time the basins fill up with sediment, in eight or 10 years, the gullies will have completely healed beneath a thick blanket of grass and there will be no more washing of soil.

Firebreaks, too, now completely encircle the city-owned land to protect the grass and the trees in the wooded areas. Fires used to burn the area every year, damaging the little protective covering the land had. The city has also provided a fire truck at lake headquarters and members of the cooperating sportsmen's clubs are prepared to help put out any blaze that might start.

The conservation effort has allowed us to make dollars-and-cents savings, also. We estimate that conservation is worth at least $15,000 a year to us. Cost savings, plus an increase in revenue resulting exclusively from greater use of the lake for recreational purposes, have enabled us to expand our municipal services, increase our personnel, and purchase new equipment.

Savings, exceeding $3,000 in the very first year after the conservation program was begun, more than repaid the city's initial appropriation of $2,200. Second-year savings far exceeded the entire sum of $8,500 that the city has invested in its conservation project to date, including labor, equipment, materials, and the fire truck.

Figures compiled for 1952 by Water Superintendent Lester Barngrover show savings in operating costs of $14,827.16. Revenue from use of the lake for recreational activities increased $3,283.50 in 1952 beyond the 1950 total. These two sums total $18,110.66. Deducting $3,125, the 1952 conservation expenditure, the net gain to the city is $14,985.66.

In 1950, before October when the city began its program, after years of mounting expenses due to increasing loads of silt, it cost the city $11,043.99 to purify and pump 582,912,000 gallons of water. In 1952, the city spent only $4,716.83 to purify and pump 693,551,000 gallons of water. Thus it cost $6,327.16 less to supply 110,633,000 gallons more than was supplied in 1950. The city also saved $8,500 in wages and water, making the year's total $14,827.16.

Treatment Savings

The amount of alum used at the filtration plant to settle the mud dropped from 269,000 pounds in 1950 to 53,600 in 1952; lime from 177,250 pounds in 1950 to 29,800 pounds in 1951.

Economy has also been effected in the reduction of cleaning required for the filter-plant settling basins. Before the program, the basins were cleaned four times a year, and each cleaning meant the loss of 1,250,000 gallons of water that could have been

pumped through meters for use by the citizens of Shawnee. Now the settling basins need cleaning only once a year, saving the city 3,750,000 gallons of water.

In addition, another half-million gallons of water a year have been saved in backwashing the filtering basins. Since this is water that has been treated with chlorine, the plant also saves in the use of this chemical. The time required for treating and filtering our water has been reduced about 25%.

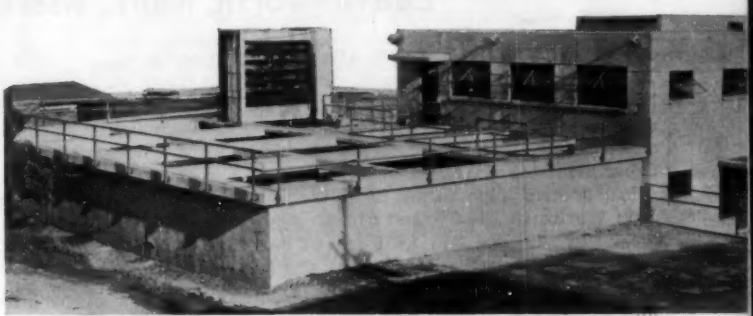
Now that the lake is a scenic attraction, its use for recreational purposes has increased tremendously. As against only a handful of people who ventured near it before, as many as 500 or 600 persons now enjoy fishing there in one day. In the year ending June 30, 1953, 10,000 fishing permits were sold at lake headquarters. A concessionaire also sells fishing permits, keeping 10% of the take, but paying the city 10% of the fees for boat rentals. Other income is derived from the sale of confections, soft drinks, beach and boating accessories, and fishing supplies.

Boat races, now held annually under the sponsorship of the Shawnee Boat Club, attract 5,000 to 6,000 persons and net the city about $2,500 which is used for further lake improvements. In 1950, use of the lake for recreational activities brought the city $1,792.50. Two years after the conservation work had begun, the revenue jumped to $5,076, an increase of $3,283.50, or 183%.

Other cities, with similar reservoir problems, have noted our program. Some of their officials have toured the Shawnee Lake watershed and observed the conservation project and its effects. We are always proud to have others inspect the project.

The Best Water in Tennessee "Believe It Or Not"

By ONEAL WEAVER
Superintendent of Water and Power
Ripley, Tenn.



Filters are placed in the open, close to the sedimentation tank.

BECAUSE our town is named Ripley, we have had to develop a tolerance of those who try to connect us with the famous "Believe It Or Not" feature. Our community was thriving long before Bob Ripley gave notoriety to the slogan, and will continue to thrive long after it has been forgotten. Nevertheless, believe it or not, the water plant that serves our 3,500 people is one of the most attractive and efficient in Tennessee.

Also, you may believe it or not, this plant treats a water which is troublesome enough to drive many operators to drink something stronger than the product that their own plants deliver, and transforms it into the most palatable drinking water in this part of the country.

Only a short time ago, we had to put up with water containing 6 ppm (parts per million) of iron that made every housewife unhappy. Moreover, the water was corrosive, with a pH of 6.2 and a carbon dioxide content of 105 ppm. Furthermore, during 1951 and 1952, our supply became so short that we were almost out of even this poor quality of water.

We now have a plant that can meet double our average demand without strain; that produces a water free from iron and with a pH of 7.6 and a carbon dioxide content of 5 ppm; that has won engineers' admiration for its efficiency and for its attractive design.

Our new plant was simple to build; we used only concrete-block construction. Locating the filter outside the plant building allowed a substantial savings in original cost. The engineers also made good use of common walls between the sedimentation tank and the filters, and also between the sedimentation tank and the flocculation basins. The operating building is constructed integrally with the filters. The entire plant, composed of sedimentation basin, filters, and operating building, forms one monolithic concrete structure.

The new plant is situated close to the old one and is tied to the existing wells and high-service pumps. Utilizing the old system as much as possible, we kept our costs relatively low.

Treatment

The plant provides treatment using preaeration, lime, alum, and chlorine. Wallace & Tiernan dry-chemical feeders apply the lime and alum to the water before it goes to an Infilco Vorti-Mix mixing basin. From there, it passes to a flocculation and settling basin equipped with Chain-Belt flocculators and sludge-removal equipment. The water then proceeds to the three filters, each of which is able to treat 333,000 gallons per day.

Since our summer demand runs to about 500,000 gallons per day, we obviously can back up our claims about adequate supply. Although softened water is, by the nature of its treatment, free from harmful organisms, we still chlorinate the filtered water as a protective measure. We have one Wallace & Tiernan chlorinator that performs this function.

The plant was designed and its construction supervised by Allen and Hoshall, consulting engineers of Memphis, Tenn., with Lorin B. Allen acting as principal engineer.

(Left) In Leavenworth, a truck with a Hydra-Lift crane bring the pipe to the job on a tilt-top trailer and unloads it into the trench. (Right) The excavation for the city's new storm sewer is hurried along with the help of a tractor-loader machine.

Storm Sewer Speed-Ups in Two Cities

Leavenworth, Kans., Makes Its Own Pipe

ABOUT FOUR YEARS AGO, officials of Leavenworth, Kans., decided to install new storm sewers, but the city budget was unable to meet the price of the pipe and the substantial freight charges. Finally, Street Commissioner Julius E. Kaaz proceeded to do the work with department personnel.

We ordered pipe forms from the Quinn Wire and Iron Works, in 18-, 24-, and 36-inch sizes, and went to work. In 1953, we laid 1,698 feet of concrete pipe, all made in our own yard. Most of the pipe went into creeks that cross private property; some was used as an extension to an old, still serviceable, storm sewer.

We also purchased a Pitman Hydra-Lift crane and mounted it on a 1948 International tandem-drive truck. The tandem drive was specified so that we could get off the streets and into the creek bed to lay the pipe. To haul the pipe, we use a LaCrosse 10-ton, tilt-top trailer.

To excavate the trenches for the sewer, we customarily use our Caterpillar HT-4 tractor with front-end loader. Just this spring, we have laid nearly 200 feet of 36-inch pipe in a creek, backfilled, and built a street over it. We expect to keep this program active all summer.

BERNARD J. CASSELLA
Superintendent of Streets

Knoxville, Tenn., Purchases Versatile Equipment

OUR SPECIFICATIONS for equipment to install our new storm sewer were simple but exacting. The machine had to be mobile. More important, it had to be versatile enough to serve several municipal departments.

To meet these specifications, Knoxville purchased a Warner and Swasey Gradall. Since acquiring the unit last fall, we have kept the multipurpose machine busy every working day, performing street repairs and allied maintenance jobs throughout the city, in addition to installing the storm sewer.

For the sewerage job, the Gradall first dug the trench, then functioned as a crane to pick up and put into place each 1,600-pound concrete pipe section. Finally, it backfilled the trench to cover the newly installed storm sewer.

The unit can use either a 36-inch or a 15-inch bucket. For moving in traffic, it is equipped with directional turn signals and running lights like those on all cars and trucks. Furthermore, the machine has a remote-control drive system which enables the operator to drive the carrier from the control cab on the upper structure of the rig. As a result, he can control it to a maximum degree while operating it on the job.

B. C. BARKER
Director of Service

(Left) In Knoxville, digging a trench for a storm sewer is a simple task for the city's new Gradall unit. (Right) Equally simple is the task of placing the sewer pipe into the excavated trench and then backfilling to cover the newly installed pipe.

The Incinerator—

"A Machine of Beauty"

New England public works men learn how to make an incinerator a civic showplace, form a new APWA chapter

The Brookline incinerator, commended by the American Institute of Architects, uses two Nichols Monohearth furnaces.

THE incinerator at Brookline, Mass., an architectural award winner, was the birthplace of the newest local chapter of the American Public Works Association. The meeting took place June 23, with nearly 250 public works men attending.

The meeting chairman, Brookline's Town Engineer Walter Devine, built the chapter's first program around the design, construction, and operation of refuse-disposal facilities, with special emphasis on incineration. The panel of speakers included Harrison P. Eddy, Jr., of Metcalf and Eddy, Boston consulting engineers; Isidor Richmond, of the Boston architectural firm of Richmond and Goldberg; and Carl Schneider, New Orleans consulting engineer.

Locating an incinerator site, said Mr. Eddy, is not a difficult engineering problem. The real difficulty is to persuade nearby neighbors that the incinerator will not become a nuisance. Incinerators themselves, if properly designed and operated, need not be offensive. The greatest legitimate objection to an incinerator is the traffic of collection vehicles that it generates. And this can be handled by intelligent, perceptive site planning.

If the incinerator employs the use of a storage bin, the use of fog-producing nozzles can avoid the creation of dust nuisances. The storage bin permits trucks to deliver refuse at a rate faster than the incinerators can receive and burn it.

Mechanical Stoking

Incinerators, within the past few years, he explained, all have been provided with mechanical stoking devices. Even so, the plant should have a good fireman on hand to clean the fires, aid the mechanical stokers, and replace an expendable part of the mechanism when the occasion requires it.

The furnaces operate more efficiently with strategically placed air-intake facilities. In most cases, air enters through the grates and fuel beds. Some plants burning a dry, highly combustible refuse, introduce air over the top of the fire to cool the gases and prevent damage to the brickwork. Some use preheaters that extract heat from the gases, and warm the air that is introduced into the furnace through the grates. A few cities use the generated heat to develop steam.

Mr. Eddy mentioned the Rochester, N. Y., incinerator which delivers steam to the local garbage-reduction plant and to the local power utility. He also mentioned the Manchester, N. H., incinerator that develops steam used in the municipal asphalt plant, and one other city that uses the steam to heat a city hospital building.*

Mr. Eddy called special attention to the brush-disposal facilities at the Brookline incinerator which make the chippings available for incinerator fuel, and give a positive means of disposing of diseased trees. He made note of a plant's facilities to deal with salvage should it seem economically wise, and discussed the uncertain market and the sanitation problems that salvage creates.

Architectural Objective

The architect's part in work of this nature, advised Mr. Richmond, is not that of redesigning the building. It is rather that of taking a building that functions soundly and has good utility, and making it look attractive. The proportions of the Brookline incinerator were architecturally good when they were combined with the functional design. He offered the suggestion that incinerators be considered "machines of beauty."

A refuse-collection crew, explained Mr. Schneider, can load trucks at an average rate varying from one half to one ton per man-hour, if the refuse is mixed garbage and rubbish with no ash. The crew will do better than that when collecting ashes. If the crew must collect from the rear of yards, it probably will be able to serve no more than 100 to 125 homes per day per man.

To make the work efficient, Mr. Schneider recommended the "reservoir" route plan. This means having an unassigned area in each supervisory district where trucks are dispatched after their regular routes are completed.

Mr. Schneider also recommended that those incinerators not able to produce a thoroughly burned ash use the sanitary fill as the means of disposing of the semi-burned residue.

The program ended by electing the following officers to the new chapter: president, Walter Devine, town engineer of Brookline; vice-president, Charles W. Cooke, director of public works for Hartford, Conn.; secretary-treasurer, H. F. Carpenter, chief of sanitation for Providence, R. I. Directors include W. A. Haynes, city engineer for Concord, N. H.; George Maher, director of public works for Lewiston, Maine; and Thurman Dix, director of public works for Barre, Vt.

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* Probably the most dramatic example of an incinerator that develops steam profitably is the Atlanta, Ga., installation. See THE AMERICAN CITY, February 1947, pp. 78-79, and February 1949, p. 13.

Sign letters, symbols, or numbers are formed from orange-yellow translucent plastic against a black background. Under night visibility conditions, the panel letters are legible at more than 500 feet. The one shown here designates an area for military aircraft.

Pittsburgh cuts talk between pilot and control tower by using specially designed directional signals

Airport Taxiway Signs

GROUND-control communication with pilots is now short and to the point at the Greater Pittsburgh Airport because of 85 illuminated taxiway guidance signs. Formerly, pilots needed complex directions from the tower, especially when they were unfamiliar with the field or when taxiing in poor visibility conditions. On occasion, pilots have even become lost on the field, unable to distinguish runways from taxiways until the tower could talk them to their destination points.

Several pilots have reported that the new signs' biggest contribution is the information they offer for safe taxiing about the field. Not only are pilots now able to differentiate easily between runways and taxiways, but they now depend upon the taxi signs for bearings as well as information about the preferred taxi course. Pilots, too, may maintain a safe average taxi speed of 35 miles per hour without fear of suddenly being forced to turn the planes abruptly to avoid passing correct turn-off points.

Major contributing factor to the development of organized ground-control traffic systems has been the steady increase in air transportation. Landings and take-offs handled by CAA airport control towers topped the 17,000,000 mark last year, as compared to almost 16,000,000 in 1952. Scheduled airline flights at Pittsburgh's airport in 1953 slightly exceeded the 1952 monthly figure of 3,432.

Similarly, airport-handling capacity has also increased. This expansion has resulted in the development of gigantic fields like Pittsburgh's where three runways measure respectively 5,685, 5,900, and 8,000 feet in length. Bigger airports with their bigger runways, in turn, inevitably required more taxiway and runway intersections. Traffic on Pittsburgh's three runways, for example, is fed by a network of 10 taxiways, which interconnect with other taxiways or runways at 36 different intersections.

Pittsburgh's sign system, although the first complete installation of its kind, is now an accepted Civil Aeronautics Administration standard. The entire installation was made in conformance with CAA specifications which regulate the location of the units. Earlier instal-

lations by the CAA, U. S. Navy, and independent airports have been only on an experimental or limited basis. The present signs were evolved from extensive tests conducted by CAA's Technical Development and Evaluation Center at Indianapolis in 1952.

Two Basic Sign Types

Pittsburgh's system consists of two basic sign types: one to indicate airport destination routes; the other to identify intersecting taxiways or runways. Depending upon airport configuration, any number of properly placed signs identify field intersections and turn-off points that lead to hangars, ramps, and loading gates.

The signs are Crouse-Hinds aluminum box units, with one to six interchangeable letter panels. The letters, symbols, or numbers, which can be inserted on either side of the panels, are of orange-yellow translucent plastic against a black background. They are made luminous at night by either 325-lumen, 6.6-ampere lamps, or 25-watt, 120-volt standard incandescent bulbs. In the dark, the panel letters are legible at more than 500 feet.

Destination Markers

The primary element of the sign system is the destination marker, which identifies taxiways and parts of taxiways by the destination to which they lead. By charting destinations rather than routes, the system can be used at almost any field, regardless of size, number of runways or taxiways. Also, the types and numbers of signs can be minimized since most airports have just a few basic destinations which must be identified. Moreover, because the signs are uniform, pilots easily become familiar with them.

Arrows on the destination markers at Pittsburgh indicate the direction in which the pilot should taxi to reach the destination marked by the sign. When the direction is straight ahead or involves a left turn, the arrow is on the left side of the destination symbol. When the direction is to the right, then the arrow is at the right of the symbol.

One marker serves as both an inbound and outbound destination sign. One side notes a runway number for outbound routes, while the reverse side uses four letters to denote inbound destinations.

Some of the standard inbound destination symbols are:

RAMP—general parking, servicing, and loading areas
PARK—areas specifically set aside for parking
FUEL—fueling and servicing areas
GATE—gate position where planes are loaded or unloaded
VSTR—areas set aside for itinerant aircraft
MIL—areas set aside for military aircraft
CRGO—areas set aside for freight or cargo
INTL—areas set aside for handling international flights
HGR—hangar or hangar area

To inform a pilot that he is approaching an intersection and to identify the intersecting taxiway or runway, an intersection sign shows the numbers and letters assigned to each end of the runway. Numbers are separated by a dash, such as "32—14," and also are arranged to indicate the direction to the corresponding numbered ends of the runway. For example, "32—14" indicates to a pilot that the "32" end of the runway is to the left, and that the "14" end of the runway is to the right.

Placement of Signs

Taxiways, on the other hand, are identified by letters. The same letter is used to identify an entire taxiway even though it is made up of several short legs caused by intersections of other taxiways or runways.

Both destination and intersection signs are used at more important intersections to provide pilots with the direction of his destination as well as his location. Destination signs are always placed on the far side of the intersection, and intersection signs on the near side.

Whether the signs are located on the left or right side of an intersection is determined by the course which taxiing pilots most generally take. If they usually turn left, the signs are placed on the intersection's left side. If they turn right, then the signs are located on the intersection's right side.

If turns are usually made in either direction, the signs are placed on both sides of the pilot's route. However, at an intersection where taxiing planes usually travel across the intersection, a single sign identifying the intersection runway or taxiway is located on either the left or right side of the route.

The installation of the new taxiway signs at the Greater Pittsburgh Airport was made possible through the cooperation of the Allegheny County Board of Commissioners: Chairman, John J. Kane, Harry W. Fowler and John M. Walker. The Daniels Electric Equipment Company, contractors, made the installation under the supervision of the airport's director, John B. Sweeney; assistant director and chief engineer, Edward G. Messner, and associate electrical engineer, Lawrence W. Hornfeck. The units were placed in conformance with the CAA specifications.

Taxiway confusion has been eliminated at Pittsburgh's airport by adopting signs which are placed at runway intersections.

(Above) A spray of water that uses only 10 gpm can cover a larger area than the open hydrant and provides comfort for more heat sufferers. (Left) Close-up of the hydrant sprinkler designed by Philadelphia's Water Department.

Philadelphia's Hydrant Sprinklers

Water department lets the kids beat the heat without a wasteful use of water

ON September 3 of last year, the pressure in part of Philadelphia's water system dropped dangerously low several times during the afternoon and evening. Fortunately, no fire alarms were sounded. During those hours, any equipment that might have required water at normal pressure could just as well have remained in the station.

The drop in pressure was caused by unauthorized opening of hundreds of fire hydrants during the city's most critical heat wave in 52 years. From August 26 to September 5, Philadelphia suffered temperatures of 90° or higher. This was a day short of the all-time record in 1901.

Illegal Hydrant Openings

For 11 continuous days, police and firemen were hard pressed to close illegally opened fire hydrants. On September 2 alone, two crews of the two departments closed 478 hydrants between 8 a.m. and 8 p.m. However, darkness did not deter Philadelphians bent on getting relief. Open hydrants were found at 1 a.m., 5:30 a.m., and 5:45 a.m.

Wholesale arrests, officials found, did no good at all, but simply aggravated frayed tempers. The answer that finally satisfied water, fire, and police departments, as well as the sweltering public, was a little, slotted sprinkler pipe, invented in water department shops with the help of the recreation department, which replaced the hydrant cap.

Recreation department personnel took on the responsibility for handling the distribution and use of the sprinklers. Upon request from fire stations, Boy Scout leaders, neighborhood community leaders, and other responsible adults, the department assigned a sprinkler after the presentation of a signed receipt which carried the agreement to abide by certain rules.

Although the city operates 43 municipal swimming pools in addition to renting a pool in the city's Woodside Park, demand for these sprinkling devices far exceeded the supply. Notices of regret had to be mimeographed to answer requests that could not be filled.

On the basis of the 1953 experience, Water Commissioner Samuel S. Baxter and General Superintend-

ent Gerald E. Arnold decided this summer to not only use last year's sprinkling devices, but to augment the supply with others built during the past winter, so that several hundred are available for use.

Studies by water department engineers indicate that an open hydrant gushes water at the rate of 300 gpm (gallons per minute). This volume was cut to less than 10 gpm by the sprinklers. Conservation of water which had gone through a costly processing treatment was an important factor in determining the expansion of the sprinkler program.

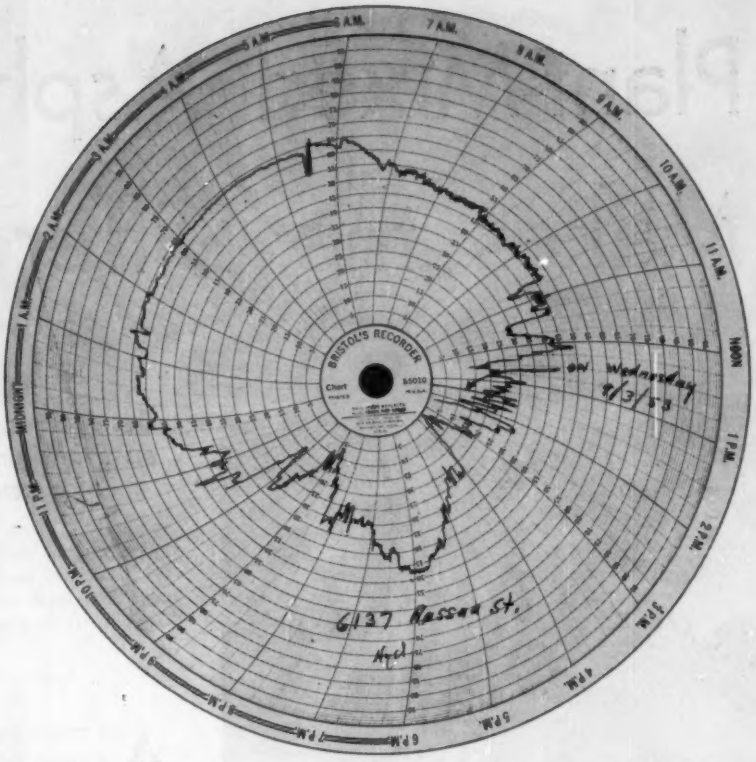
From a humanitarian angle, the sprinklers were desirable because they were far more effective in achieving the purpose intended by the hydrant tamperers. The torrent from an open hydrant provides comfort for only a few children, while the spray from a sprinkler covers a larger area and accommodates many more children.

Sprinkler Construction

The device used in Philadelphia is relatively simple. Pipe of 1½-inch size was cut to lengths of 6 and 15 inches. The short piece was attached to a hydrant cap at one end and then with a right-angle fitting to the longer piece in which 10 or 12 slots had been made. When the sprinkler is attached to the hydrant, the long end remains vertical and shoots a spray in a circular pattern that provides a shower for many children.

An important factor in the reaction of the fire and water departments is that improper handling of the hydrants has frequently resulted in damage. Sudden shutting off of the hydrant by a novice often results in a broken stem. If this occurs when the hydrant is open, a crew has to be sent to stop the flow of water. If the stem breaks when the water has been shut off, the consequences are worse. The damage is not discovered until there is a fire and firemen find that they cannot use the hydrant.

From the water department's viewpoint, however, the expanded use of the sprinkler system is to maintain required pressures and also to prevent waste of water. Unauthorized opening of hydrants during the September heat wave was estimated to have resulted in a 25% to 30% waste of the water pumped. Although Philadelphia's average daily use of water for the first half of the year was 360,000,000 gallons, it jumped to 486,000,000 gallons on September 1, and to 580,000,000 gallons on September 3, an enormous rise.



This chart shows that twice, on last September 3, the water pressure dropped virtually out of sight because of unauthorized water use. Fortunately, no fires occurred.

Preventing the waste of water by use of hydrant sprinklers is only part of Philadelphia's program to increase water conservation. An important aspect of the program is the extension of metering to cover the remaining one-third of the city's unmetered services.

Superintendent Arnold, who is former director of water resources for the National Production Authority, is emphatic on the subject of meters as a conservation measure. Under his supervision, plans have been made to install 180,000 meters over a three-year period to make Philadelphia a universally metered city. Today there are 320,000 metered services in the system and 180,000 that are unmetered. The metering program provides for the installation of 60,000 meters a year over the three-year period.

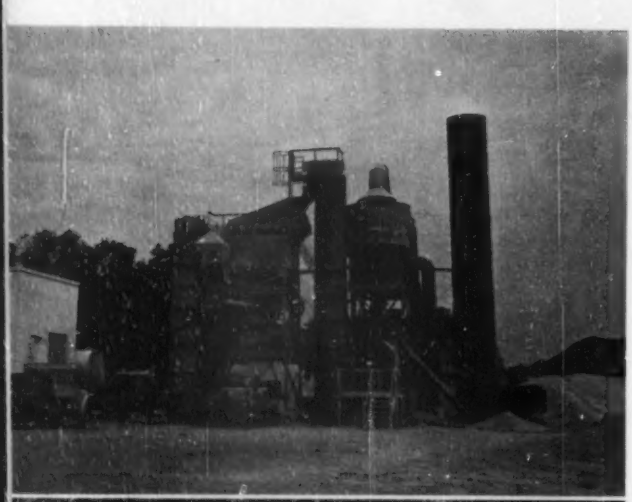
City Metering Program

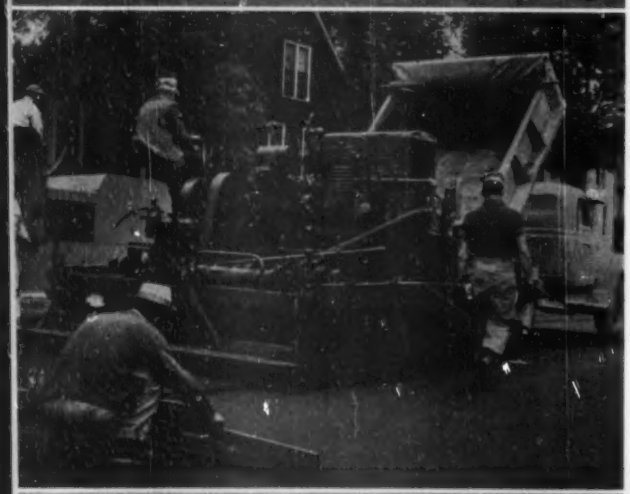
Preparations for the city metering program began last year. In January of 1953, the city took over maintenance of the existing meters in the city. Meters now are maintained by the department, which makes the needed replacements without charge

(*Continued on page* 189)

Water gushing out of a hydrant at the rate of 300 gpm is not only a serious waste of the city's supply, but provides relief from the heat for only a very few children.

Plant-Mixed Asphalt Makes the Difference





Des Moines, Iowa, puts street resurfacing on a businesslike schedule with the help of a new asphalt plant and paver

By JOHN TIPPEE
City Engineer
Des Moines, Iowa

ANY TIME a city engineer tries to do a first-class job of street resurfacing with second-class equipment, he has his hands full. Fortunately, our new city manager, Leonard G. Howell, appreciated our handicap when he came here from Madison, Wis. The result is that the capital city of Iowa, with a population of 180,000, now has an asphalt plant able to deliver 300 to 400 tons of asphalt mix per day. This permits us to put our maintenance program on a workmanlike schedule.

Our past practice has been to prepare our mixes in old, small plants, and spread the asphalt with a patrol grader, or by hand raking. This was an inefficient, costly way of working—trying to make equipment do a job that it was not fitted to do. Today, we mix the asphalt in a 50-ton-per-hour, gas-fired Cummer plant, lay it with a Barber-Greene paver, and do a job that pleases the city.

Plant Site

We have a fortunate site for our asphalt plant. It is centrally located and served by rail. We filled a flood-plain area close to the river about 5 feet above flood-water level and set our plant on it. Two sets of railroad tracks serve the plant. One brings in the asphalt, and the other, the aggregate.

We have four 12,000-gallon storage tanks for the asphalt, and we use a crew of eight men at the plant. The force includes two firemen, a mixerman, a dragline operator, a feed man, a bin "top" man, a foreman, and a watchman.

For our resurfacing, we use what we call a modified, single-course, stone sheet. This consists of 37.5%

(Above) The new asphalt plant is ready for convenient, fast operation. (Center) The Barber-Greene paver wins public favor by getting in quickly to lay the pavement and getting out as quickly. (Bottom) A few finishing touches are provided by the Huber roller and the street is ready for the load of traffic.

Three aggregate grades show up clearly.

The city-owned Byers crane easily keeps the plant supplied with aggregate.

blended sand, 37.5% agricultural lime, and 25% blended stone chips. To this we add 8% asphalt cement of 85 to 100 penetration, mixed in 2,500-pound batches. The blended sand consists of one-third fine sand and two-thirds concrete sand. The fine sand has a sieve analysis approximately as follows:

Sieve Size	*% Passing*
4	99
8	98
30	95
50	90
100	63
200	26

The size of the stone chips depends upon the type of surfacing that we must place. If it is relatively deep, we use a ¾-inch aggregate. At more moderate depths, we use ½-inch stone. Most of our surfacing is no greater than 1½ inches. When we have no more than ½ inch to apply, we place it by the penetration method, using 0.3 of a gallon of RC-4 cutback asphalt, covered by 17 pounds of blended screenings per square yard.

Our paving operation moves along very swiftly. We first apply a tack coat of RC-1 over the cleaned street to be resurfaced. Then we turn the Barber-Greene onto the street. A 5-ton Galion roller does the initial compacting of the new surfacing, and a 10-ton Huber, the final rolling.

Everyone is pleased with the speed with which the crew works. With this method we can resurface several blocks in a day and reduce the traffic inconvenience to a minimum. Merchants, particularly, are grateful, since a tied-up street is costly to them.

We operate approximately 100 working days during the summer months. In the fall and winter, we use the same crew to haul gravel and resurface unimproved streets. We also like to keep the men available to clear the street of snow.

I do not know what size a city should be to justify its owning an asphalt plant. However, everyone must agree that the hot mix of a modern plant, laid with a modern machine paver, offers a superior street surface. Not only is the community delighted with such a street, we are understandably pleased to be able to produce it.

Films for the Municipal Engineer

In addition to those films listed in the May and July issues of THE AMERICAN CITY, the General Electric Company anoûnces a supplemental list which is part of the "More Power to America" series. The films will be loaned free of charge for single showings, but for extended use a complete kit (film and literature) must be purchased. The films can be obtained by contacting an office of the General Electric Company, Apparatus Sales Division, in any major city, or by writing to Film Distribution Section, General Electric Company, Schenectady 5, New York.

Clean Waters, a motion picture dealing with pollution of natural waters, was listed in May. Others include:

WATER

Pipeline to the Clouds

16mm. Color. Sound. 25 min.

A comprehensive explanation of both the sources of water—including the hydrological cycle—and the techniques of water treatment, presented graphically in animation. Documents causes of water supply crises and noteworthy experiments for meeting shortages. Prepared in cooperation with U. S. Public Health Service and American Water Works Association. Won first prize at International Film Fair in Milan, Italy, in 1952.

TRAFFIC

Life of the City

16mm. Color. Sound. 15 min.

Relates a planned transportation-system to healthy municipal growth and offers effective remedy for clogged arteries of urban American.

RECREATION

A Chance to Play

16mm. Black and White. Sound. 20 min.

Dramatization of need for more adequate recreational facilities for all groups—children, teenagers, older men and women, as well as working men and women. Offers solution to grave social problems such as juvenile delinquency through the use of recreation areas which are equipped for nighttime use. Sponsored jointly by General Electric and National Recreation Association, and produced by the March of Time.

Layne & Bowler announces that *The Test of Time*, announced in the May issue has been withdrawn from circulation. *Deep Waters* is the latest Layne movie on ground-water development.

Contrast between the old and the new on site of the Chicago Land Clearance Commission's Project No. 1, at South Parkway, and E. 31st St. The four tall buildings in the background are first apartment structures erected by New York Life Insurance Co. for its 2,000-apartment project, Lake Meadows. In the foreground are blighted buildings which Lake Meadows replaces.

Chicago Answers the Challenge

Wide-scale anti-blight program developed—to save deteriorating neighborhoods

By MRS. FREDERICK H. RUBEL, *Director, Metropolitan Housing and Planning Council, Chicago, Ill.*

THE "City of the Big Shoulders" has flexed its muscles, and is beginning to get up off the ground. Chicago is now confident that it has more authority, machinery, money, and push, all aimed at a civic comeback, than any other big city anywhere. A leading metropolitan newspaper, *The Chicago Daily News,* in a probing investigation of slums, has shaken the city out of its apathy. Its stories are reprinted in a booklet prophetically named "The Road Back."

The Build-Up

The first hint of civic revival appeared in the early 1940's when Illinois Institute of Technology, the fastest-growing engineering school in the country, announced its decision to rebuild 50 acres of South Side blight. With remarkable rapidity, a series of stunning modern school buildings and dormitories grew phoenix-like from the ashes of old tenements. The example was infectious. Soon Michael Reese Hospital, a neighbor one mile to the east, abandoned its search for a slum-proof location, and joined Illinois Tech in the fight to redeem its tatterdemalion surroundings.

Together, with the Chicago Housing Authority, Metropolitan Housing Council, and Pace Associates, architects, they drew a 3-square-mile redevelopment plan to show that, with private participation, the entire near South Side could be reclaimed. Meantime, a committee of keen and able businessmen, appointed by the Housing Council produced a 4-point plan to attract private builders from the periphery to the center of town. It was enacted into the Illinois Blighted Areas Redevelopment Act of 1947, and later into the U. S. Housing Act of 1949. Chicago's voters approved bond issues of $15,000,000 for slum clearance and $15,000,000 for relocation housing to convert the legislation to action.

All of this is now ancient history. By 1951, several private redevelopment projects, including New York Life Insurance Company's spectacular Lake Meadows, were taking shape. Controversial as public housing had become, one brace of relocation projects (state aided), comprising 1,400 units, were planned and becoming visible. After a traumatic battle in the City Council, sites for an additional 10,500 federally aided homes, about one-fourth of Chicago's possible share under the Housing Act of 1949, were approved. An experimental program of privately financed nonprofit housing, triggered with a state grant, was launched for middle-income families. Private residential building had upped the Chicago area in 1950 to a total of 43,000 housing starts, its greatest year since the boom of the '20's.

Yet it was apparent to close observers that the city was losing its fight against slums. Blight was on the march at a rate that hopelessly outdistanced reconstruction. Redevelopment was far enough along to reveal that the cost of curing city decay was little short of prohibitive, if new slums grew faster than the old could be cleared. Population outflow was accelerating.

Alderman Robert E. Merriam of the southeast University of Chicago area sounded a challenge: "Can Our Neighborhoods Be Saved?" Alderman Allen Freeman of Uptown introduced emergency legislation to ban rooming houses from good residential districts. Neighborhood meetings passed resolutions demanding better building enforcement and more police protection.

The city administration responded by creating a commission in July 1952, composed of representatives of all city departments—the Interim Commission on Neighborhood Conservation. It received a $5,000 appropriation, and after six months rendered a report proposing that neighborhood conservation be made a "major objective;" that picked neighborhoods be officially certified as conservation areas (entitled to prior claim on the all-too-scant city services), and that corporate funds be appropriated for this work. Four neighborhoods were certified. The Welfare Council put a staff to work helping communities organize. By 1953, Chicago was a cauldron of frenetic activities, vaguely oriented towards slum prevention. Adding them all up, they still didn't spell c-o-n-s-e-r-v-a-t-i-o-n.

Convinced that all of the good work in evidence still failed to touch the underlying causes of city decay, the Metropolitan Housing and Planning Council late in 1952 reinvoked its former plan of assigning a potent committee of business and professional men to researching and putting through an effective method of blocking the spread of blight.

Using a pilot area in the University of Chicago vicinity, the committee studied the forces which were tearing it down; made a plan proving that it could be saved from blight at a fraction of the cost of ultimate redevelopment; but that no existing agency possessed powers adequate to do the job. The Urban Community Conservation Act, making slum prevention a public purpose, was drawn up, and carried through state and local legislatures, to supply the missing tools. A court decision on its constitutionality is due this year.

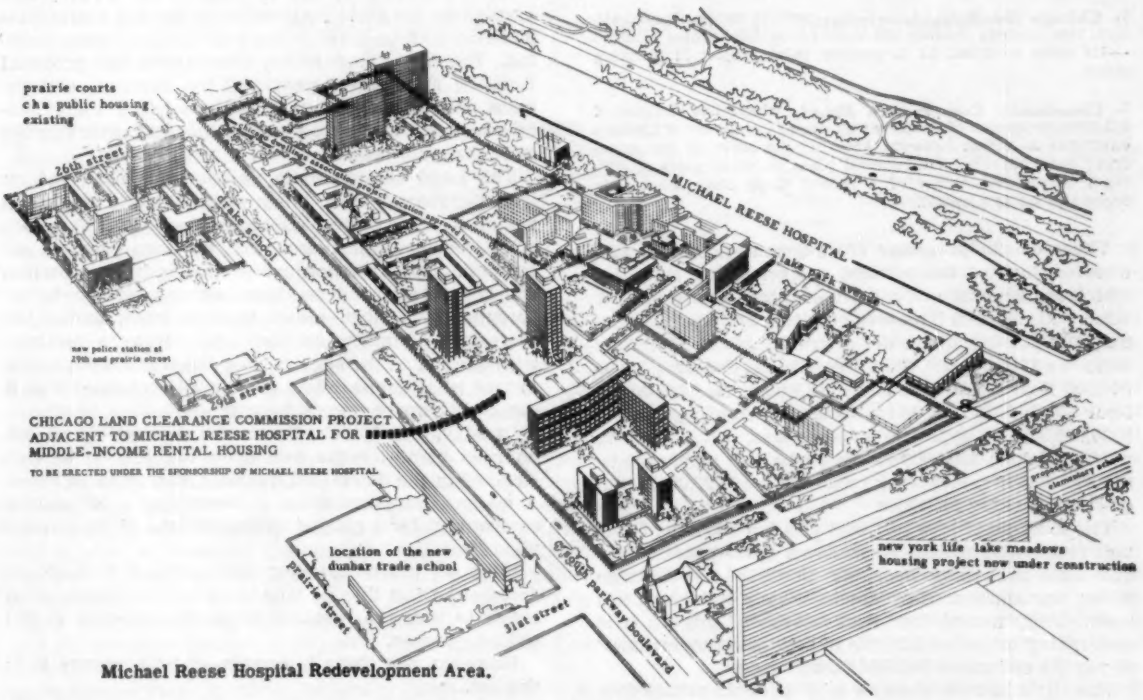
Under the Housing Authorities Act of 1934, the Blighted Areas Redevelopment Act of 1947, as amended; the Neighborhood Redevelopment Corporation Law as amended in 1953; the Lien and Repair Law, enacted in 1953, and the Urban Community Conservation Act, Chicago has the power to condemn, clear, repair, remove, remodel, rehabilitate, resell, operate, or relocate structures to cure or prevent slums. An imminent zoning revision is looked to, to pin down environmental standards.

Private Corporations Conservation Plan

In addition to the conventional powers available for enforcement, low-rent housing, and redevelopment, Chicago has in the amended Neighborhood Redevelopment Corporation Law authority to set up private corporations, upon securing the consent of owners of 60% of the property in a prescribed area, to condemn any part of it for implementation of a conservation plan. The city's anti-slum program rests chiefly, however, in the five-man Community Conservation Board appointed by Mayor Martin H. Kennelly to activate the Urban Community Conservation Act.

The Board has the responsibility of designating the areas which are to be conserved, and to nominate 9 to 15 representative citizens in each community to a Council, which will give the local citizenry a voice in the preparation and functioning of the conservation plan. The Board has the power to plan jointly with the Community Council, and to implement these plans, using not only the police powers available to the health and building departments, but also the power of eminent domain, so that a few recalcitrant property owners cannot block a plan for improvement of the total community.

The Board may, as a last resort, make repairs to bring buildings in conservation communities to minimum legal standards, placing a lien on the property for the costs, if the owner



Michael Reese Hospital Redevelopment Area.

The proposed plan for housing and the enlarged Michael Reese Hospital campus covering the area between 26th and 31st Streets and South Parkway Boulevard, and Lake Park Avenue, which is being sponsored by the Michael Reese Hospital.

fails to cooperate. It may acquire by purchase or condemnation property for rehabilitation, renovation, conversion, or demolition, and may convey this to corporations or private individuals or to other city departments and local governments. It may initiate zoning changes, and street closings and openings to carry out the agreed plan. Business concerns, property owners, or other groups may be encouraged by the Board or Councils to raise revolving funds for loans to property owners for maintenance and repair purposes consistent with the plan.

Relying upon the Neighborhood Conservation Commission as the coordinating apparatus set up to deliver the services of all official bodies concerned with housing, housekeeping, redevelopment and renewal in any form or shape, there are few conceivable situations which the city is powerless to correct.

The Program

When H.H.F.A. Administrator Albert Cole recently invited the Mayor's Housing and Redevelopment Coordinator to present the Chicago program to the housing hierarchy in Washington, as the first city in line for the full renewal treatment, seven agency heads composed the delegation. The big five are:

1. ***The Coordinator,*** running a catalyzing operation, and endeavoring to cement the numerous component bodies into a unified slum-fighting machine. As the Mayor's overseer of all operations, he seeks to integrate the various sovereign agencies into purposeful and harmonious relationships. Also picks up the slack in operations such as relocation.

2. ***Chicago Land Clearance Commission,*** with five large (274 acres) privately financed redevelopment projects in partial stages of occupancy, demolition, land assembly, and planning. Its first and best-known achievement is the 101-acre Lake Meadows residential and commercial project, of which four tall apartment structures are completed; regional shopping center framework visible.

3. ***Chicago Housing Authority,*** with 24 projects, 12,000 units of low-rent housing occupied; 2,300 units, 6 projects, under way; 9 projects amounting to 7,000 units planned.

4. ***Chicago Dwellings Association,*** private nonprofit corporation, two projects totaling 375 units for middle-income families —318 units occupied, 57 in process; third project in planning stage.

5. ***Community Conservation Board,*** which has designated a 2,880-acre stretch of Southeast Chicago (University of Chicago environs) as Urban Renewal Area "1" "to serve as the prototype" for comprehensive renewal plans in other parts of Chicago. Early designation of a second large Near West Side renewal area is planned.

These official programs are augmented, and in fact dwarfed, by vast independent redevelopment activities which are gouging out patches of blight, and replacing them with modern improvements that are changing the map and possibly the center of gravity of the city. They include a $300,000,000 West Side Medical Center; a $100,000,000 Near North Side Medical Center; the $45,000,000 Near South Side Illinois Institute of Technology Center; $300,000,000 in approved expressways; $27,000,000 in public schools; $204,000,000 in parks and playgrounds; $100,000,000 in motor-truck terminals, and $27,000,000 in off-street-parking facilities.

The most ambitious proposal of all, a 505-acre, 5,000-unit residential project, encircling a government center and state university near the mouth of the Chicago River, was announced in March. Widely embraced, and nostalgically named the "Fort Dearborn" project, it is undergoing intensive analysis to find "ways and means" to pay its estimated half-billion-dollar cost.

The city's balance sheet reflects its rapid plunge into the slum attack. With roughly $1,250,000,000 scheduled for slum eradication, more than $1,000,000 has been appropriated for coordination, including $100,000 for the Conservation Commission's activities. In 1954, the budget of the Department of Buildings, responsible for regulating new and existing buildings, and enforcing zoning, was raised from around $1,500,000 per annum to $2,000,000; the appropriation of the Plan Commission was raised from $146,000 to $200,000, and $129,000 was allocated to the new Conservation Board. One senses that the reservoir of potential resources has barely been touched.

The proportions of the going renewal operation are revealed in relocation. Some 18,000 families and single persons, and 867 business enterprises have been relocated since 1948 to make way for public and private improvements; 22,000 more are scheduled for evacuation from approved project sites.

Most convincing evidence that new vitality is flowing through the town's veins is the rash of aggressive community associations rallying to the idea of city renewal. Laketown, Uptown, North Lawndale, Southtown, Lakeview, West Kenwood, Back O' the Yards, Lincoln Park, and more—are actively in business—some with professional staff and budgets. The strongest are the South East Commission and the Hyde Park–Kenwood Community Conference, whose impressive accomplishments have won for their area the designation as Urban Renewal Area No. 1.

Renewal Area No. 1

Renewal Area No. 1 will be the proving ground for Chicago's unprecedented slum-fighting weapons. The area surrounds the University of Chicago. Its grass-roots leadership includes intellectuals, businessmen, clergymen, and housewives. They work side by side in block meetings, and in committees on schools, planning, or occupancy standards.

The University itself is involved up to its eyebrows. With a planning budget of $100,000 for three years, granted by the Field Foundation, it has put a first-class planning staff in strategic space in the Geography Building. The City Conservation Commission has provided Building Department personnel for intensive enforcement and housekeeping in the area. The Plan Commission has assigned full-time technicians to service the local planning office.

The Land Clearance Commission has surveyed an irregular-shaped East–West strip along a run-down business artery to test for redevelopability. The Mayor's Coordinator has assigned two men to work on community organization in the weaker fringe districts. Thirty real-estate firms have already agreed to an "occupancy" control clause in each lease, listing the accredited occupants of each unit. Many a resident, with one eye on the suburbs, has deferred his departure to "see what happens." It is generally conceded that if conservation won't work here, it won't work at all.

In May, the Harris Trust and Savings Bank announced plans for the first office building to be constructed in the downtown business district in 25 years. A major department store is conducting a nationwide competition for a plan of redevelopment of the famous "Loop" itself.*

With so much brewing, sophisticated Chicagoans deplore the fact that no long-range comprehensive plan exists to give the fabulous expenditures some visible unified purpose.

However, one thing is certain—most everyone is in the act.

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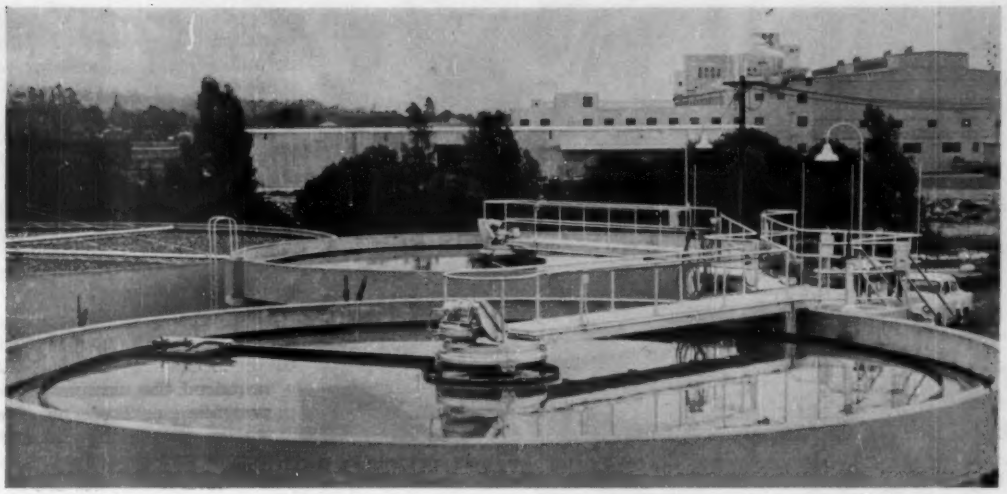
* See THE AMERICAN CITY for May, 1954, page 7.



Most California industries are able to recognize that waste treatment—which is most important in this area—is a legitimate business expense. After the waste from this industry is treated, it is used to irrigate an orchard.

Stop Ground-Water Pollution

A realistic ordinance, backed by a firm policy of enforcement, is vital if valuable well-water resources are to remain useful

By ARTHUR PICKETT
Division Engineer
Industrial Wastes Division
Department of County Engineer
Los Angeles County, Calif.

THROUGH the years, the elimination of pollution from surface waters has received much attention. This kind of corrective program has made great progress toward restoring the natural purity of these waters. Its continuation is vitally important.

In many cases, however, the program has received support largely because of general esthetic benefits, such as the elimination of unsightliness and development of the recreational and other uses of a particular stream or lake.

The protection of underground water supplies is equally vital to the development of many areas. However, esthetics are usually not involved and, as a result, the importance of the work is not generally understood.

Los Angeles County is perhaps unique, therefore, because of its comprehensive protective program for underground water supplies. In Los Angeles County, more than 500 water companies and city water departments obtain 65% of their water supply from great natural underground reservoirs.

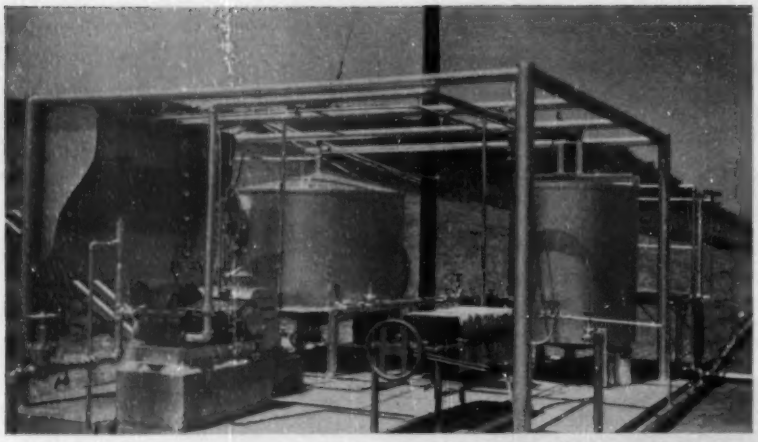
Thousands of farmers, ranchers, and industrial plants have also drilled private wells into these reservoirs. As a result of the "dry cycle" of the past several years, and because of excessive pumping, water levels have been dropping at an alarming rate in many reservoirs; and the underground water supplies have become vulnerable to pollution by improper waste disposal.

Bacterial Contamination

Surface waters are quickly effected by bacterial contamination. Water-reaching underground aquifers, in contrast, must ordinarily leach slowly through great natural filters of sand and gravel, and the danger of bacterial pollution is remote.

Nevertheless, certain bacteria and virus organisms can exist in underground water supplies and can make the water unfit for use without treatment. For example, bacteria have survived for millions of years in peat beds below the Los Angeles Coastal Plain through their ability to split the sulphates contained in natural waters in order to obtain the oxygen which they require for continued existence.

Natural ground water which normally contains 40 ppm (parts per million) or more of sulphate is inoculated with colonies of these otherwise harmless bacteria as it passes through the peat beds to deeper aquifers. The resulting bacterial action reduces all sulphates to sulphides. Many coastal cities have an excellent soft water which



Injection wells permit return of waste salt water from oil-field production to the oil-bearing sands of the area. Casing-head pressures frequently exceed 2,000 psi.

must be extensively treated, however, to remove objectionable sulphides and odors.

Water in surface streams will travel at velocities varying from 4 to 10 feet per second. Water in underground reservoirs may not travel 50 feet in a week. When considering pollution of underground reservoirs, one must, therefore, take a fresh viewpoint of time. Thirty years can pass by after a source of pollution has been corrected before the damage becomes evident.

Recently, 33 wells serving several cities and unincorporated communities of Los Angeles County began to develop objectionable tastes and odors.

Unlined Sumps

During the years of World War I, the area which is now covered by these cities was relatively uninhabited. Large holdings were devoted to the storage of oil and other hydrocarbons in great unlined sumps. At the end of the war, the sumps were abandoned. Pollution caused by seepage from these sumps first became evident in 1950, and will continue for many years until the slow process of dilution by natural fresh waters corrects it.

In another case, an industrial firm discharged between 200,000 and 400,000 gallons per day of waste water containing sulphuric acid, into large unlined sumps on their own property. After several years, a small, shallow industrial well on adjoining property, about 300 yards south of the largest and closest sump, suddenly became polluted with sulphate exceeding 20,000 ppm.

Upon investigation, a second industrial well, located about ¼ mile to the south, showed pollution with 1,200 ppm of sulphate. Still another well, located approximately ¼ mile west, showed a sulphate content of more than 1,000 ppm, and a fourth well, east of the sumps, revealed a similar concentration.

Although the source of pollution has been stopped, no one can predict how many years will elapse before the damage to the underground aquifer corrects itself by natural dilution.

This case also illustrated the fact that "upstream," as measured by surface topography is not necessarily upstream to underground aquifers. For example, a domestic well developed sulphates in excess of 1,200 ppin. This was traced to an oil-reclamation plant about ½ mile away and about 50 feet lower in surface elevation.

About four years before the ground-water pollution developed, sulphuric acid storage tanks of this company developed leaks and acid was released to adjacent ground. The company had corrected this situation, but the discharge had traveled steadily downward through porous ground to pollute the well. Fortunately, this case of ground-water pollution was corrected by extended pumping of the well.

Detection of Sources

Frequently the source of pollution can only be determined by careful detective work. About five years ago, 11 small wells serving a rural community suddenly became unusable. Investigators drinking this water detected the unmistakeable evidence of epsom salts. The chemical analysis confirmed the presence of magnesium salts in the water, and with this clue, we soon determined that a water-softening plant, utilized for development of locomotive boiler water, was responsible.

Brine from this water-softening operation had been discharged to an unlined sump for about four years. Peculiarly, wells in the immediate vicinity of this sump showed less effect from the ground-water pollution than wells located more than ¼ mile distant.

In this case, we required the industry to haul the brine in tank cars to the ocean for disposal. We also required the company to temporarily provide residents of the area with water, pending recovery of the underground water supply. After five years, natural supplies are again approaching normal and property owners may soon resume pumping from their own wells. The vigorous enforcement of a reasonable local ordinance can indeed accomplish much.

Such an ordinance should first provide for issuance of individual permits to affected industries containing reasonable and tailor-made conditions for waste disposal. Important factors include:

1. The quantity and character of the waste and the necessity for its disposal in the manner proposed.

2. The method of disposal, including any necessary pretreatment.

3. The geology of the area. Where aquifers are protected by thick lenses of clay, the discharge of industrial waste may, in some cases, be safely accomplished without pretreatment, although similar discharges into an area of porous gravel might quickly destroy a domestic water supply.

4. The point of disposal, whether onto the ground surface where plant growth and soil bacteria will absorb some of the chemicals and affect a degree of purification, or into drainage channels, unlined sumps, or seepage holes where possibilities of pollution may be much more serious.

5. Effect of the discharge upon quality and possible uses of the receiving waters or adjacent wells. There may be no possibility of pollution by a particular waste if the natural waters in an aquifer are already of inferior quality. Also, water used for agricultural purposes may benefit by the addition of chemicals present in an industrial waste, although the same chemicals would quickly damage water used for domestic purposes.

If the regulatory ordinance establishes a policy of minimum conditions essential to protection of the underground waters and prevention of public nuisance, rigid enforcement is not only legally possible, but in Los Angeles County has received the endorsement of industrial management, civic associations, and the general public.

What Our Welder Does to MaintenanceCosts

A municipal electric plant cuts over-all maintenance costs 25% by using an arc welding machine

By L. A. BERGMAN
Superintendent of Public Works
Jamestown, N. Y.

AT THE Jamestown municipal electric plant, serving our western New York community of 43,500, we delegate maintenance and repair to a six-man crew. Two of the men have been trained to operate an electric arc-welding machine that we acquired about four years ago. These men and this machine have produced savings of 25% and more in our annual maintenance and repair costs.

Before we obtained the welder, our maintenance chief, J. Porsley, had a discouragingly large amount of threading and coupling to do for pipe fitting. Now welding has taken over most of that work at only 75% of the former cost of materials and labor. Savings run almost 100% when this crew has to repair a small leak in a high-pressure steam line. A small, properly applied weld saves the cost of a new section of line, of refitting, and other miscellaneous costs.

The crew now does a good deal of the plant fabrication. New pipe hangers, cabinets, air ducts, guards for machinery, and sometimes truck-body repairs, all are simple operations when the arc welder is used.

One of the neatest and most valuable jobs recently completed was placing a patch on an elbow that had worn through the coal pulverizer system. Fleetweld-5 electrode, a product of the Lincoln Electric Company, was used for the job. Chief Porsley hard-surfaced the interior of the patch during one of the regular maintenance shutdowns of the system. He is confident that this repair will give the patch even longer life than had a new section of pipe been installed.

Cost Savings

The welding crew saved us a substantial amount of cash on economizer tubes, too. Ordinarily, these cost about $475 each. The men welded these for us at a cost of $150 each. The old pipes were replaced, but the old end sections were retained and the new pipe, with fins welded on, was joined to the old ends for the four boilers in the plant.

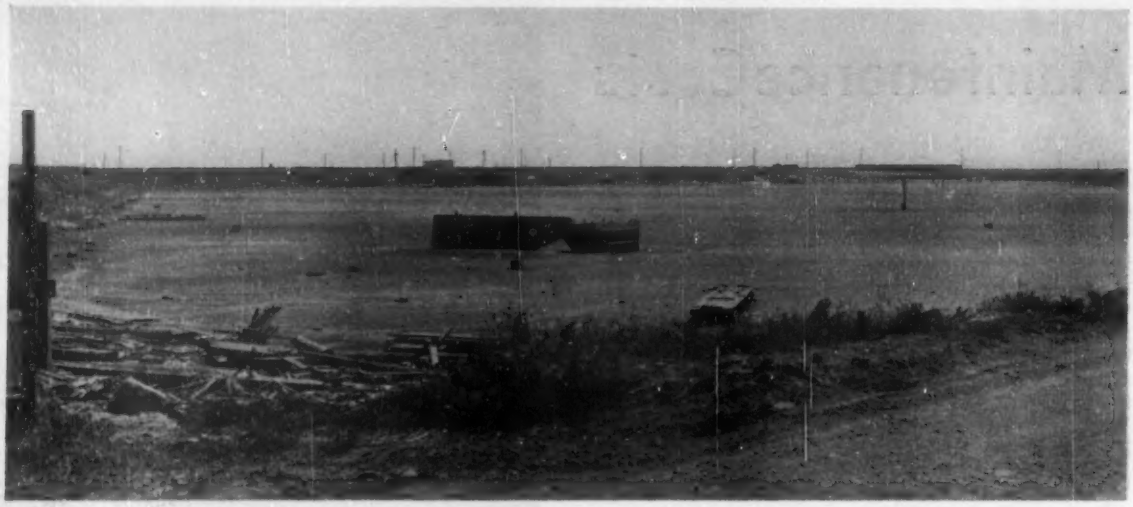
For convenient operation, the welding crew has to use a substantial footage of welding line. This requires an allowance of about a 5-amp increase in strength for each 200 feet. Not long ago, the welders fabricated a superheater drain line several floors higher and several hundred feet away from the welder.

A welded patch on the elbow of the coal pulverizing system meant a lot of money saved for the Jamestown power plant.

The welder makes it possible to fabricate many convenient accessories. The plant has a light metal shield over its kerosene fuel tank for protection from occasional flying sparks. There also is a three-compartment bin for storing water-purification chemicals, allowing easier access to the material than if they were used from bags. Another fabricated cabinet stores and protects water-sampling equipment. Outside the plant, the ash bucket was rebuilt by welding, and various bracings and additions to the ash storage tank were made with the welder.

Repair costs were cut by $325 when the new flanged pipe was welded to the old threaded ends on the economizer tubes.

Sanitary Fills Provide—



Berkeley prepares to reclaim another portion of waste shoreline by means of a sanitary fill.

Sanitary Fill Series, XI

More Shoreline for Berkeley

By OWEN DYER, *Director of Service, Berkeley, Calif.*

BY CONSTRUCTION of sanitary fills, Berkeley is reclaiming waste shoreline areas for business and industrial use. These lands, in the San Francisco Bay area, are all that the city has available for expansion. And for nearly 30 years, we have been reclaiming Bay lands with the refuse discarded by our people.

We make it a practice to enclose the proposed fill area with bulkheads. The California State Health Department requires us to dewater the land before dumping any material. The bulkheaded area is usually approximately 40 acres.

The city maintains two separate fills at all times to receive the refuse from the 115,000 people served by the city. One fill receives only refuse collected by city equipment. This waste is chiefly garbage and mixed refuse. The other fill receives refuse hauled by private refuse collectors and contains little organic garbage.

The fills are constructed in sections that are 100 feet wide, 600 feet long, and 14 feet deep. Two 6-foot layers of waste are compacted in each section. The first layer is covered with 1 foot of earth; the second, with 2 feet of cover.

Two tractor operators are all the men required for the work. One is assigned an International Model TD-14A crawler tractor and a bulldozer. The other operates an International Model T-9 crawler tractor and bulldozer.

Approximately 57,000 tons of refuse are dumped into the two fills each year. We have discovered that we can expect a settlement of about 25% in the height of the fill before it becomes stabilized. We then proceed with whatever construction our city requires.

More Playgrounds for Richmond

By R. S. HOPSON, *Chief of Operations, Richmond, Va.*

THE sanitary-fill method of refuse disposal is an old story in Richmond. We built our first fill in 1947, transforming a smoky, open dump into a neat, insect-free, rat-free disposal area. From every standpoint, including cost of operations, we have enjoyed good dividends from this work. Wasteland has been made productive; areas have been acquired for parks; swamp areas have been eliminated, and the important problem

By clean, workmanlike operation, Richmond reclaims waste property with its sanitary fill.

of disposing of refuse contributed by nearly 250,000 people has been solved.

The fills require approximately 25 acres of land per year. We place the refuse in layers varying from 6 feet to 15 feet in depth. As many as six fills may be operating at once, and eight separate pieces of major equipment are assigned to the work. These include: four International crawler tractors with 2-yard Drott Bullclams; two Allis-Chalmers HD-9 crawler tractors with Trackson front-end shovels; one 6½-yard Bucyrus-Erie pan scraper; one ¾-yard P & H dragline.

In addition, trucks may be assigned to the operation as they are required. The crew is made up of 14 men who operate the equipment and maintain the fill areas. The men assigned are six bulldozer operators, one crane operator, six attendants, one foreman.

The fills show a settlement factor of about 5% to 10% in five years. Decomposition is entirely complete in less than five years when built according to the procedure we follow. We have also found that we are able to dig into some of these fills and use the decomposed refuse for cover material for new fills.

The entire operation costs about 14 cents a cubic yard —a nominal cost indeed for the many playgrounds, parks, and parking areas which we have been able to provide for the city.

More Cropland for Kearney

By RALPH LANCASTER, *Superintendent of Public Works, Kearney, Nebr.*

IN THIS part of Nebraska, a field of fresh, green alfalfa is a beautiful sight. Even more important than its esthetic contribution, is the material benefit the legume provides by returning badly needed nitrogen to the soil which is then able to produce a crop of fine hay with little cultivation.

Usually, one can't expect to grow alfalfa in an abandoned gravel pit. However, Kearney is accomplishing just such a feat by first filling the pits with refuse deposited by the sanitary-fill method. Since 1946, we have been reclaiming the pits, 2 acres at a time.

Approximately 12,000 people contribute 3,000 cubic

At one time the site of an abandoned gravel pit, this area looks like the rest of the rich cropland adjoining Kearny.

yards or refuse per year to our landfill. To handle the refuse, we use an Allis-Chalmers HD-7 track-type tractor equipped with a 2-yard Drott Bullclam. Only one man, working part time, is required to keep our fill in good, sanitary order.

The abandoned gravel pits measure approximately 40 feet in depth and 300 feet in width. The ground around the pit is covered with fine sand that is not suitable for road gravel. As the refuse is pushed into the water, sand is pushed in with it. When the pit is finally filled to the waterline, the area resembles a cone that measures about 12 feet in depth at the center.

From then on, we operate a conventional "area" fill by continually compacting the refuse and mixing it with dirt and sand from the outside of the depression. Top soil for the final 2 feet of cover is obtained from the bank of an open storm sewer built many years ago.

Refuse collection is a municipal operation performed by two Leach 15-yard Packmasters and two 9-yard Refuse Getters. Our charges for collection service are $1 per month for a single-family residence, and $1.50 per month for a duplex, plus 25 cents per month for each additional unit. Payment is on a quarterly basis, payable in advance.

The fill area is located about 4 miles from the center of the city. It has been rewarding to the people of Nebraska to not only see this area no longer a wasteland, but to see it become a source of income. For when the fill is complete, it is leveled and sowed with alfalfa that is irrigated by a well located on the property.

Pennsylvania's River-by-River Clean-Up

PENNSYLVANIA is reclaiming two more rivers, taking them out of the class of "polluted" and restoring them to "clean-stream" standards. One is the Juniata River; the other, the Lehigh.

The reclamation of these rivers represents another stage in the unprecedented state-wide river-restoration program, one of the first in the nation's history, exemplified by the restoration of the Schuylkill River. (See THE AMERICAN CITY, March 1954, p. 109.)

The Juniata River drains an area of approximately 3,400 square miles. Its largest clean-up project is at Altoona where one plant has already been built and another is nearly complete. The project involves purification of not only domestic, but also a substantial volume of industrial wastes.

The next largest plant on the river will serve Lewistown's 14,000 persons. The plant in nearby Granville also is currently being improved in size and treatment degree. Tyrone is building a new plant to treat wastes contributed by 8,500; Bedford's plant serves 3,500; and Everett, 2,300. Hollidaysburg, Roaring Spring, Martinsburg, and Williamsburg, all have plants providing complete treatment. Bellwood is enlarging its plant to provide this treatment.

Industrial waste, formerly contributed to the river in a raw state, now is being treated before it is discharged. The West Virginia Pulp and Paper Company is removing pollution amounting to nearly 200 tons of sludge daily. The Pennsylvania Glass Sand Corporation is running waste water through settling tanks where fine sand is removed. Canneries also are supplying industrial-waste treatment.

Lehigh River

The Lehigh River has already seen much activity. Today, fish are again running in portions of the stream, denoting a remarkable recovery of the stream.

Desilting systems that remove silt from coal washings have been most significant factors of this pollution abatement. However, recent construction of sewage-treatment plants by Bethlehem, Easton, and Lehighton are other highly important contributions to the water's improved condition.

The Bethlehem and Easton plants provide complete treatment for a total population of 125,000; the Lehighton plant, for a population of about 6,600 people. Allentown, also discharging effluent into the river, has had a plant for many years, as have Nazareth, Northampton, and Palmerton. However, the latter two have proceeded to make plans for additions to their plants.

The Lehigh River valley also has benefited from treatment of industrial wastes. The Bethlehem Steel Company's treatment works showed that it was not only feasible to purify blast-furnace wastes, but also that it was profitable.

The New Jersey Zinc Company, the L. F. Grammes and Sons metallurgical plant, and others have joined the parade of industries cooperating with this clean-stream movement. As a result of this extensive program, even sensitive fish are returning to the river.

As of the first of this year, 29 new plants were in the process of being built, and 11 others were being modernized. Excluding the Philadelphia plants, more than $30,000,000 is being spent on sewage-treatment projects throughout the state. The three Philadelphia plants and their intercepting sewers will cost approximately $60,000,000.

One Pennsylvania plant plans to process the sludge for use as fertilizer. This plant is to be operated by the Wyomissing Valley Authority and will serve Wyomissing and West Reading. It will provide primary settling and secondary treatment by trickling filters. Sludge will pass through a Raymond flash dryer and then will be bagged and sold. The treatment works of the York area (population 90,000) will also process sludge for fertilizer use.

Industrial-waste treatment will be expected to advance appreciably through Pennsylvania's clean-up work. Active experiments with activated sludge as a means of treating paper-mill wastes are currently under way at the Johnsburg plant of the New York and Pennsylvania Company.

Wastes are being treated by several methods at the plant of Henry Disston and Sons. Flue dust, a blast furnace waste, is being removed at the Midland plant of the Crucible Steel Company. Phenols also are being removed from waste water in a dephenolization plant erected by this same company. Oil separators have been developed and installed at two refineries of the Pennzoil Company near Oil City.

The entire clean-streams program is being actively pressed by the Pennsylvania Sanitary Water Board and the Department of Health, Harrisburg, Pa.

Rear view of the new Marple Township municipal building showing the general office and police station wing at the left and the road equipment wing at the right.

A feature of the new muicipal building is a communications center that is staffed at all times. Shown at left, are two members of the township staff receiving messages.

Marple Township's

New Municipal Building and Communications Center

By R. T. NICHOL, *Township Manager, Marple, Pa.*

MARPLE has a new township building for which it did not have to borrow one cent. Its L-shaped, one story, stucco building was built over a period of several years at a total cost of approximately $20,000. Before the new township building was constructed, the municipal offices were located in a 20-foot by 12-foot room on the second floor of the fire hall.

Marple Township is a fast-growing community in the suburban area surrounding Philadelphia. Its population has increased from 4,500 to 8,500 in the last three years. There are few businesses and no industry in this residential area. Since the tax base is limited, economy was necessarily a major factor in the building of the new structure.

The building was started as a voluntary community effort with individuals contributing time and materials, but interest lagged, and the project stopped. In 1950, the township levied a building-fund tax to pay for the completion of the structure. In 1953, the construction recommenced, and the building was finished by a private firm.

Each of the wings of the new building measures 27 feet by 65 feet. One wing is used to store the township road equipment, which previously was subject to the continual exposure of the elements. The other contains the various municipal offices and the township's police station.

Ready for Emergencies

The police station has been equipped with two cells, making it the first jail in the township's history. A central communications center has also been installed with a telephone switchboard and a land-base radio station. Now all of Marple Township's police, fire, ambulance, and civil defense calls can be handled at the switchboard, which is attended at all times, while the RCA radio land-base station enable the police to keep in constant contact with the township's mobile units.

The two police squad cars, the Police Chief's car, the town's ambulance, the road maintenance truck, and the field wagon fire truck are equipped with RCA two-way units. This enables the township personnel and equipment to be used to maximum effectiveness, particularly in the case of an emergency.

Cooperation with Other Communities

The township's radio network operates on the same frequency as the Delaware County police radio network, with which the township has a working agreement. Most of the other communities of the county are coordinated with the county system. Marple is able, therefore, to work in close cooperation with the other communities in the county. Since the county network regularly receives state and federal reports, the township is also in close contact with the activities in a five-state area.

Landscaping for the new building was done by various civic groups, while the furniture was bought at a nominal price from a utility company that was converting to all-steel furniture.

The walls and roof of the building have been designed and constructed with an eye to the future, for when the need arises, a township meeting room and additional offices can be added as a second floor.

Swimming classes are part of the summer recreation program at new waterfront park.

Rogers City Improves Its Waterfront

By NEIL JACKSON
City Manager
Rogers City, Mich.

Local industries and civic groups join city government in creating handsome park

City Manager Neil Jackson

SEVERAL years ago, the Michigan Limestone Division of the United States Steel Corporation donated a sizable strip of the Lake Huron waterfront to the City of Rogers for public recreation purposes.

Then began a chain reaction—a series of individual and group activities that have put new life and spirit into this city of approximately 4,000 inhabitants.

Preparation of the Plan

A retired executive of the steel corporation became acquainted with Dearborn's well-known recreation superintendent, Henry D. Schubert. They began discussing the possibilities for developing a recreational area at Rogers City, and Mr. Schubert was later invited to give a series of talks on recreation before various civic groups in Rogers City. While there, he looked over the area, and prepared a plan for development of the new Lakeside Park, which was placed on display in the Public Library.

Bringing Plan to Reality

Then, Rogers City citizens started to transform the plan into reality. Every truck owner in the city donated a truck and driver for a day to start the fill project. With the help of the County Road Commission's equipment and city equipment, thousands of yards of necessary fill material and beach sand were hauled into the park. Topsoil was added and the whole area seeded in early spring and the beach was open for business in the summer.

The Lions Club, seeing the need for picnic areas, challenged the Kiwanis Club to a fireplace building contest. The challenge was accepted and two beautifully designed outdoor fireplaces were added to the park. The winners of the contest were treated to a picnic steak dinner in the park—cooked and served by the losers.

Next came the playground equipment. The city started installing swings and slides purchased from the American Playground Device Company of Anderson, Ind. Other clubs, and crews from the local Bradley Transportation Company's fleet of bulk freighters, added their contributions, making further purchases possible. A Kiddie Land was started in the southern end of the park for children up to seven years of age. This area is being equipped with slides and swings and other equipment specifically designed for the little tots.

Rogers City has had a tax-sup-

Members of the Rogers City Lions Club are shown building one of the park's two outdoor fireplaces. The completed fire-

place (above) which can readily be used for picnics, has two benches and space specially designed to hold a cord of wood.

ported city band for almost as long as the city has been in existence, and the Friday night out-door concerts are a traditional outing for children and grown-ups alike. A band shell was added to the park plan and was completed in time for the Memorial Day opening of the concert season. The band shell will also be the scene of the recreation program's musical and dramatic productions.

To provide seating space, a 90-foot square pad of concrete will be laid down in front of the shell where park benches will be set up during entertainment periods. The rest of the time, the concrete area will be used for the teen-agers' weekly outdoor dances, roller skating, shuffle board and other games.

Small-Boat Harbor

A harbor for small boats is under construction on a three-year plan. It will enclose an area of about 25,000 square feet, with depths varying from 3½ to 8 feet. A minimum of 500 lineal feet of dockage space will be provided for deep-draft vessels and an equal amount for shallow-draft boats. The harbor is expected to serve a vital need for service and refuge to the multitude of pleasure craft that tour the Great Lakes each summer.

Lack of adequate harbors on the Michigan side of Lake Huron forces the majority of yacht owners to travel along the Canadian shore. The harbor will be an integral part of the recreation area now being developed. One will complement the other and be an added attraction to both townspeople and tourists alike.

All recreation projects have been and will continue to be community projects, with city employees doing the major part of the work, supplemented by community work projects, service-club work projects, and actual donations of money and equipment. All fears of a project "too big for a city of this size to handle" have been erased by the tremendous popularity of the project. The byword now is, "What can I do to help?"

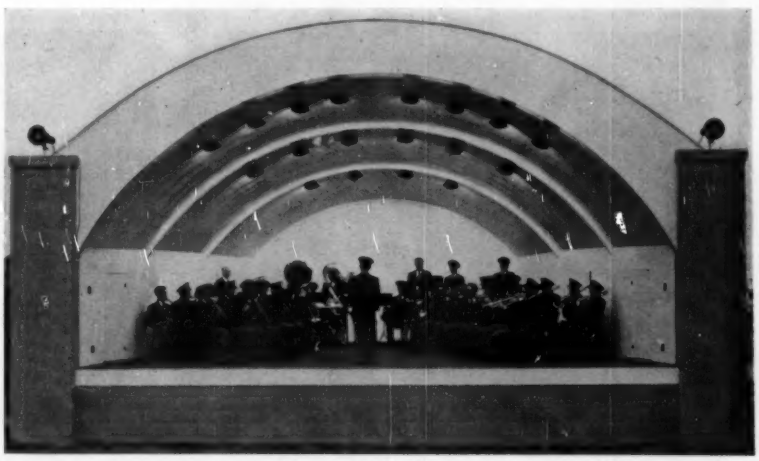
Summer Recreation Program

Along with physical development of recreation areas, the city has developed a full-scale summer recreation program. Nine weeks of scheduled activities are presented each summer, including competitive sports, group games, arts and crafts, music, dramatics, and swimming instruction.

Smaller children assemble daily in Westminister Park, a tree studded, bowllike park under the supervision of an elementary education teacher. It is not uncommon for a working mother to leave her school-age children at the park in the morning with a picnic lunch and to pick them up again after work, knowing that they are under the care of a competent trained instructor. For pre-school-age children, the city recommends that a baby sitter attend the children while in the park.

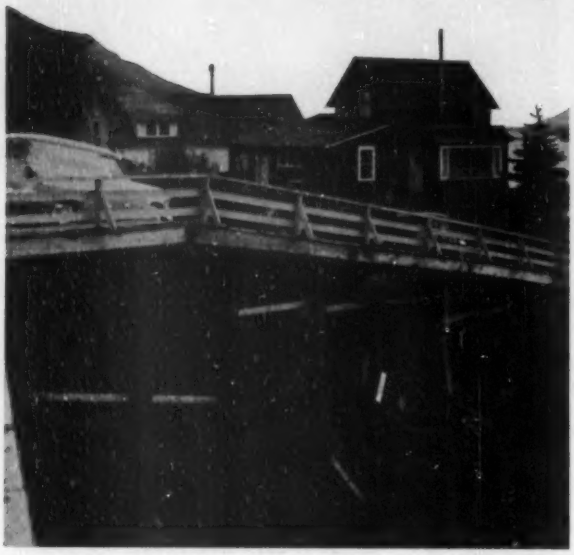
Rogers City has long been the scene of industrial activity. It played an important part in Michigan's great timber industry up through the early 1900's and then turned to quarrying and processing limestone. It now boasts of having the world's largest limestone quarry.

Nestled below a range of hills on the northwestern shores of Lake Huron, it is an ideal recreation spot; but recreation has been overlooked in favor of industrial expansion. Now with industry's recognition of the relationship between job production and healthful, happy living conditions, industry and city government have joined forces to create an atmosphere for better living.



The new band shell at the waterfront park was built for the Friday night concerts that are held out of doors. The concerts are given by the city's tax-supported band.

Statehood Would Benefit Alaskan Cities



Ketchikan's streets, because they have no place else to go, hug the face of the mountain, supported on timber trestles.

TO DETERMINE the problems, progress, and potentials of Alaska's cities, THE AMERICAN CITY sent its Engineering Editor to make a seven-city survey of the principal urban areas of the nation's prospective forty-ninth state.

This roundup article will be followed by a series of stories, outlining conditions in each city visited.

By WILLIAM S. FOSTER, *Engineering Editor*
THE AMERICAN CITY

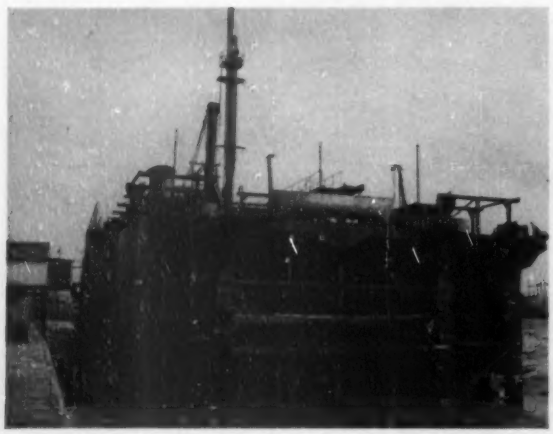
ALASKA'S cities, one must conclude from first-hand observations, would function more efficiently if this great territory were admitted to statehood by a constructive and carefully prepared act. No doubt can exist that, insofar as the cities are concerned, these municipalities would progress more rapidly as units of an independent state rather than wards of the federal government.

Moreover, such a move would result in reciprocal benefits. The resolute, independent thinking and planning evidenced by Alaskan municipal officials would also benefit the entire nation.

Territorial status inflicts restrictions on those living in Alaskan cities that would be repulsive to us living in the States. For example, a traveler entering continental United States from Alaska must prove his U. S. citizenship. This practice is not only annoying to a traveler but degrading to the Alaskan, since it casts doubt on his loyalty. It also has financial repercussions for investors who might be interested in municipal bond issues but are easily discouraged by the implication that the territory is considered "foreign" country. Under statehood, this restriction would no longer remain in effect.

Territorial status also puts an economic brake on development. Present laws require that all shipping to the territory must originate at a stateside port and be carried by U. S. lines.

The Canadian port of Prince Rupert, terminal of the Canadian National Railway, lies more than 500 miles closer to Alaska than Seattle, the nearest U. S. port.



Anchorage shows resourcefulness by a makeshift power plant, constructed from a beached tanker broken by the heavy seas.

The port of Valdez contents itself with a wood-plank bridge that would not be acceptable to a county road in the States.

In addition, freight rates from New York to Prince Rupert are identical with those from New York to Seattle. Yet the law requires eastern and midwestern products to make this 500-mile detour, roughly equivalent to a needless trip from Chicago to Washington, D. C. The reaction of port cities in the States to the imposition of such a detour would be interesting.

Our Federal Aid Highway Program also shortchanges Alaskans most cruelly. This potentially great territory needs highways to help open the mineral wealth that now lies out of reach, and to open timber resources that have scarcely been scratched. Yet the Federal Aid Act excludes Alaska from its benefits. It grants assistance to all 48 states, Hawaii, the District of Columbia, and Puerto Rico, but does not permit Alaska—with its desperate need for highways—to participate.

The only highway assistance Alaska receives offers no aid to her cities. The federally administered forest highway funds, earmarked for forests in the coastal areas of the United States, allots less than 10% of its total, or $1,960,694, to Alaska, even though the Territory has forestry resources probably greater than the balance of the United States. None of these forestry funds can be spent in cities, even though the roads being improved pass through the cities as arterial highways.

Statehood would change this drastically. The present federal formula administers these Federal Aid Highway funds on the basis of size of the state and population. One estimate would place Alaska's share at $22,000,000.

Many of those who contend against statehood advance the argument of a sparsely populated country. Yet the territory numbers 200,000 people, and manifests all indications of continued growth. This argument also loses credence if the Alaskan population is compared to the 1950 census statistics of many of the 48 states: Nevada, 160,000; Wyoming, 290,000; Delaware, 320,0000; Vermont, 380,000; Idaho and Montana, 600,000 each. Altogether, 14 states each have a population of less than 1,000,000 yet function satisfactorily within their statehood status.

Cordova's mayor, Dr. Will Chase, one of Alaska's most famous "sourdough" physicians, makes a point that Alaska now has twice the population that was credited to 28 separate states at the time that each made the transition from territory to state.

The enemies of Alaska's development seem to be high shipping costs, high labor costs—the latter stimulated by the government's decision to make a great fortress of the territory—and the lack of roads. It is true that the weather and terrain do impose peculiar conditions, but these are not insurmountable.

Alaskan cities do profit from the enactment of a law which provides benefits similar to those of the old Public Works Agency. Known as the Alaska Public Works Act, the law earmarks for cities 50% of the funds allowed for approved public works projects, which embrace everything from streets to schools. This act can be justified because of the economic load that this tremendous defense program has thrust on the cities, and probably should be continued until the effects no longer dominate the Alaskan economic structure.

Characteristics and Misconceptions

In physical size, Alaska is relatively large, covering nearly 600,000 square miles, or twice as much as Texas, and exceeding the total land area of the 21 smallest states. Its general coast line is longer than that of continental United States; and its largest glacier, Malaspina, covers more land than the state of Rhode Island.

The country's climate is admittedly rigorous, but the area is far from a wasteland of ice and snow. The average January temperature in Anchorage, the territory's largest city, is 12° above zero, or 4° warmer than Bismarck, the capital city of North Dakota. On an average, Milwaukee and Duluth experience colder weather than Anchorage. During the summer, in Fort Yukon on the Arctic Circle, the temperature often rises to 100° F., or warmer than the high of Palm Beach, Fla.

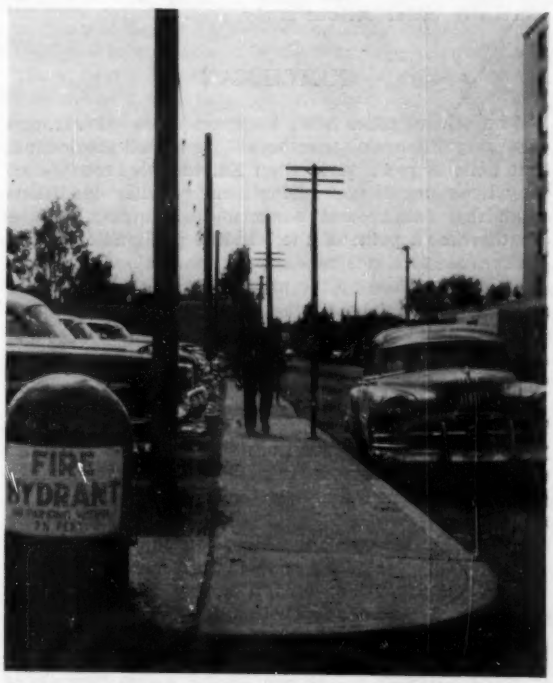
Alaska's midnight sun amazes the newcomer. Fairbanks traditionally begins a baseball game at midnight on the Fourth of July. Anchorage golfers start a tournament at the same time. The Eskimo judges time by "sleeps" instead of days, since the long periods of sunlight in summer and darkness in winter offer no accurate yardstick for counting days as we know them.

Municipal Administrators

Alaskan cities have adopted mature governing policies. Five of the cities toured have professional city managers, and a sixth is about to adopt the management plan. There are 10 states among the 48 which do not count as many city managers as this. Also, Alaska's Territorial Legislature provides a government that is debt-free and has a surplus in its treasury.

Today's Alaskan cities serve as a proving ground for all United States municipalities. Their management of utilities in the face of unusual conditions commands respect. The progress that they make in city planning as these urban areas quickly make the transition from frontier settlements to modern cities is thought-provoking. Fire protection in areas where wooden structures and oil stoves are popular is challenging. Police protection provided in areas inhabited by persons that most associate with Jack London's stories is commendable.

(*Continued on page* 106)



The only evidence marking this as a street in the deep Alaskan interior — Fairbanks — is the insulated fire hydrant cover.

(*Continued from page* 105)

ANCHORAGE

In Anchorage, Alaska's largest city, with close to 55,000 people within the city and on the outskirts, you can almost stand and watch the transition to a modern metropolis. Anchorage had roughly one-tenth its present population as recently as 14 years ago.

The city buries its water mains a full 10 feet in the ground and still has freezing problems because the superchilled water, flowing at nearly 29° F., acts as a kind of refrigerating coil to draw the frost down even to this great depth. This is a problem that Anchorage's engineers are mastering.

Under Anchorage's rapid-fire growth, electric power development has been a constant race that has produced unusual contestants. The most unorthodox of all has been a damaged tanker, broken in two by heavy seas, which is beached in the Anchorage harbor and is used as a supplemental source of power.

On the other end of the line, telephone facilities are being expanded in solid and long-range fashion. Public works activities generally are pushing forward in an orderly manner, and city planning as a municipal activity is in professional hands.

VALDEZ, SEWARD, and CORDOVA

Valdez and Seward are small cities of about 2,000 inhabitants. They are both transportation centers with good, all-weather port facilities, one connecting with the interior by highway, the other by rail.

Cordova, now little more than a fishing community, seems to be on the brink of a great mineral development. It is the port city of the famous Kennecott copper development, and although this installation no longer operates, mineral exploration in the area promises great possibilities. In Valdez, a coking coal development, as a supplement to steel production, is currently under serious study.

KETCHIKAN

The coastal cities with their moderate climate and towering mountain-range backdrops are all interesting, but none is more vivid than Ketchikan. Probably no city lives and thrives under more peculiar conditions than this fishing and lumbering community on the southernmost point of the Alaskan panhandle. It has no railroad facilities, no highway connections, and even air transportation by the major airlines is provided by a small amphibious plane assigned to shuttle service from the airport on a neighboring island. Only shipping facilities give the city a direct transportation tie to the rest of the world.

The terrain itself also dares Ketchikan to prosper. The mountains crowd the shoreline, forcing the city to build an ingenious system of streets on timber trestles and to maintain what is undoubtedly the largest system of publicly owned stairways per capita of any city in the world.

It is probably the only American city to include a tunnel as a part of its main business street. It lays water and sewer pipe on top of the bedrock, close to the ground surface, and often leaves it exposed. It uses wood-stave pipe for water-storage tanks and corrugated iron for sewer lines.

Ketchikan has not shared in the great network of defense installations that the government is building and is, therefore, unscathed by the population impact that these provoke. Yet, the city boasts a tremendously large pulp mill situated on the outskirts. This industry is a $50,000,000 project, built with extreme care, and aimed at a long-range operation which will crop only such timber from the forests as is replaced by annual growth. Ketchikan can expect to experience substantial growth as this huge pulp development assumes full operation.

JUNEAU

Juneau, Alaska's capital city, resembles Ketchikan in some ways. The mountains crowd it against the sea, but not as forcibly. Many of the streets also are shelves on the side of the mountain, but Juneau's better soil condition permits the use of crib retaining walls instead of timber trestles. It has a fine airport, accessible by car, but no highway connections. It has a timber industry as well as a large fishing industry.

Juneau is almost unique among Alaskan cities in that it does not have to own and operate any utility except water supply. The other cities, if they expect to have electricity and telephone services, must supply it themselves.

FAIRBANKS

Fairbanks, sitting on the edge of the Arctic Circle, undoubtedly is the most famous city in the territory with the possible exception of Nome. Fairbanks, too, has experienced explosive growth problems, so that the city is sprinkled with little log cabins among modern, multistory buildings. The city's water system is probably the nation's most ingeniously designed; and it is now building a modern electric generating plant. The school system is witnessing a dynamic expansion, along with the substantial growth of new homes and apartments.

Fairbanks' great industry, gold mining, has been virtually swallowed up by a tremendous military installation. Ladd Air Base encompasses 1,000 acres of land. Ladd, Eielson Air Force Base, and Big Delta Army Base account for annual expenditures approaching $100,000,000. Not much farther north are substantial oil reserves, awaiting exploitation.

Conclusion

From the municipal proving ground that is Alaska we can expect to see all the results of good city-planning principles put into practice.

We can observe the results of the city-manager plan, with its emphasis on professionals dedicated to the cause of efficient government, in cities where it has its most open opportunity to function.

We can see water supply and distribution principles developed that, if adapted in the states, would guarantee freedom from the danger and annoyance of frozen pipelines.

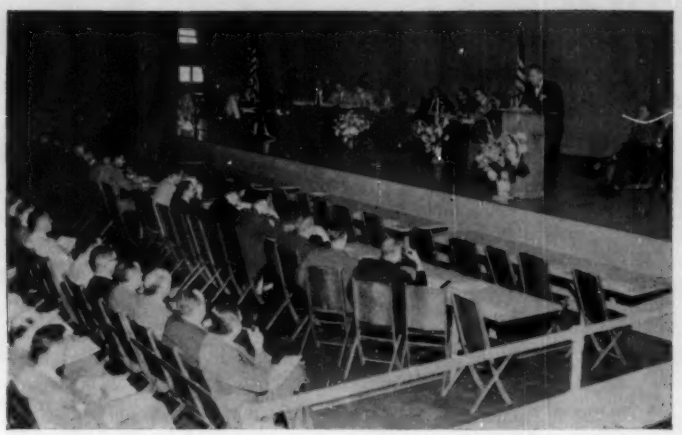
We can benefit from the proving of street-construction policies that will assure freedom from the problem of heaving because of frost.

We can test the ability of the cold Alaska waters with their tremendously vigorous tides of 30 feet and more to absorb otherwise untreated sewage without damage.

If Alaska attains statehood, we can see for the first time the opportunity of framing a state constitution that gives its municipalities a proper balance of power in order not to constantly subject them to being easily outvoted by sparsely populated rural areas.

One of the greatest arrays of hydraulic engineering talent ever assembled, discusses the future of the centrifugal pump.

Centrifugal Pumps: Their Problems And Their Future



GIVEN the choice between efficiency and dependability in water-works pumps, designers in the United States unhesitatingly pick the latter. This was emphasized at a forum on centrifugal pumps and their problems held recently in Kansas City, Kans., as one of the events of the dedication of the new pump factory erected by Fairbanks, Morse and Company. The forum brought together what is judged to be the greatest array of hydraulic engineering talent ever assembled at any one time.

For operating conditions in this country, said Iowa University's Dean Francis M. Dawson, the presiding officer, we must have reliability of performance, accessibility of service points, and facility of repair of the pumping unit itself. None of these features can be sacrificed merely to gain a little more efficiency in an already highly efficient pumping unit.

The dependability of performance that United States' manufacturers have built into their pumps is unmatched anywhere in the world, explained Professor Aladar Hollander, California Institute of Technology.

A pump manufacturer, in this country, would go out of business if he couldn't produce a unit that would serve continuously for five years. Yet, leading foreign manufacturers have cited six months of continuous performance as outstanding.

Adjustable impellers and other mechanical contrivances may increase the range of peak efficiency somewhat, but the units would then be more susceptible to breakdown. One outage can be many times more costly than the advantages these refinements in efficiencies can earn in many years of performance.

Need for New Ideas

Nevertheless, room for improvements does exist, added University of Michigan's Professor Richard G. Folsom. Without sacrificing dependability, designers will find ways to reach high efficiencies even at off-peak performance periods. The stockpile of ideas must not diminish, he urged. Dean Dawson supported this thought with a warning that the Russians are educating twice as many engineers today as the United States. Professor Hollander added that this search for new ideas must not be approached as a tedious task, serving only to earn our daily bread, but as an exciting game.

At present, the designer is confronted with limitations on the pump size which are created by the problems of metallurgy, explained Ireal A. Winter, of the U. S. Department of Interior's Bureau of Reclamation.

Large irrigation pumps of the single-suction, vertical-shaft type may be able to handle as much as 5,000 cfs (cubic feet per second) against low heads. Others have been designed to deliver 1,225 cfs against a 354-foot head at 95% efficiency and, when tested, have delivered as much as 1,700 cfs.

Pulsation in diffuser vanes presents special problems in these sizes. The shaft creates a fabricating problem; and the impeller must be built of stainless steel.

Chief Engineer Clement P. Lindner, of the Army's South Atlantic Division of the Corps of Engineers, stated that the date of the forum was propitious, since it coincided with the opening of bids for drainage pumps designed to handle 3,600 cfs. He affirmed the need for bigger pumps to reclaim lands that will produce crops for our ever-increasing population.

Deep well pumps, suggested Chief Engineer Dan R. Rankin, of the Peerless Pump Division, are being set deeper and deeper. A 400-foot setting is common, and a 1,000-foot setting is now beyond the experimental stage. These depths require larger shafts of superior materials, designs that balance out the thrust, and larger, more substantial bearings. The submersible pumps, with their motors placed in the bottom of the well, promise to serve these greater depths.

Sewage pumps, particularly those handling sewage sludge, present a challenge to improvement, said Iowa University's Professor Philip F. Morgan.

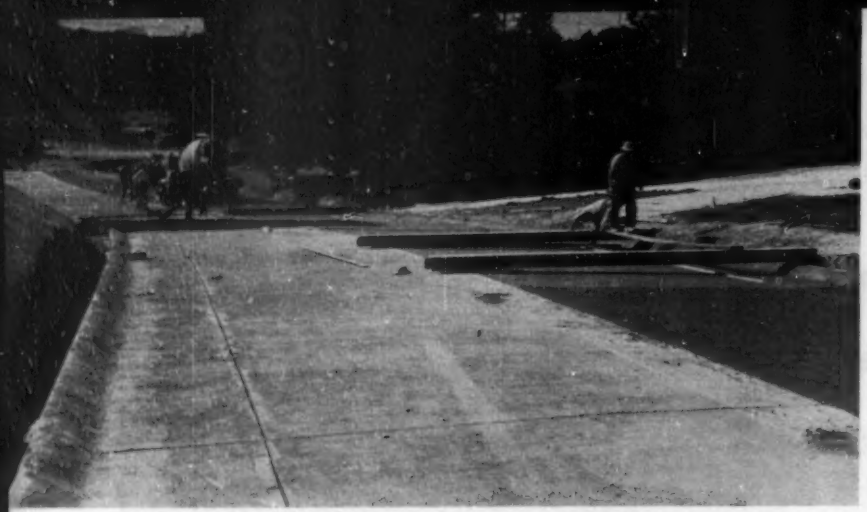
The research of Professor Harold Babbitt of the University of Illinois, is revealing, Professor Morgan states, but has not been generally adopted. However, the work has uncovered difficulties by disclosing a sevenfold range in shearing stresses in the sewage sludge.

He recommended simple sludge piping lines, designed for easy cleaning and operating against a positive head, to alleviate many of these problems.

Model testing, reported Massachusetts Institute of Technology's Professor James W. Daily, has a need for more device types, particularly for testing models of large-sized pumps.

Professor George F. Wislicenus, of John Hopkins University, discussed the possibility of advanced speeds and advanced operating temperatures, making a reference to the performance of the gas turbine forced to operate at 1,500°F.

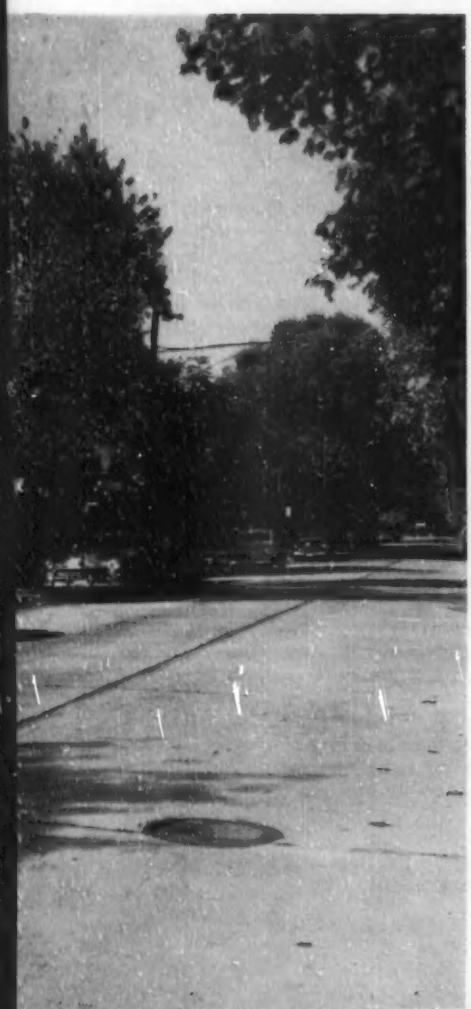
The moderator of the forum was Professor Robert T. Knapp, of the California Institute of Technology. More than 1,000 engineers attended.



An improved street, built to an 8-6-8 cross section, uses old curbs and gutters.

Shelbyville, Ind., develops owner-city participation plan based on width of street and traffic use that encourages high-type construction

A Street Financing Plan That the Public Likes



Streets, more residential in character, are built to a 7-5-7 cross section and are provided with integral curbs and gutters.

By JOE BANTA
City Engineer
Shelbyville, Ind.

FOR the first time since the predepression days of the late 1920's, the 12,000 citizens of Shelbyville, Ind., have a financially feasible and publicly acceptable plan to permit a long-range program for high-type street construction.

We call this the ownership-participation plan. It sets up a formula that divides the costs between the city and property owners in proportion to public use and width of the streets to be improved; it provides that all streets must be classed on the basis of existing and future traffic needs; and it grants a bonus to property owners if their streets have to be widened.

This new policy governs the construction of all new streets and the reconstruction of old streets. The City Council put it into effect in 1952 after a thorough study of the street problem. The city determines the share of the costs it will pay by considering the traffic load and the street width proposed. The city also will pay for intersections and for all grading and excavation. Remainder of the cost will be assessed against benefited property owners under the provisions of the Indiana Barrett Law.

Encourages Street Widening

Since so many of our streets outside the business district are very narrow, the new plan will encourage widening by reducing the property owner's share to compensate him for the removal of shade trees. Actually, it will cost the property owner less if the street is widened than it would if the present width were maintained. The width classifications matched against city participation run as follows:

Classifications	*Width (in feet)*	*City's Share (Per Cent of cost)*
One Way		
one side parking	25–28	30
Two Way		
no parking	29–30	50
one side parking	31–34	70
two side parking	36–40	90

The amount of participation based on public usage is as follows:

Public Usage	*City's Share (Per Cent of cost)*
Business or Industrial	90
Arterial	70
Feeder	50
Residential	30

An illustration of the method of computing the city's share of the cost may be made by considering a street, classified as arterial (70% participation) and built 36 feet wide (90% participation). The city would bear 80% of the cost of constructing this street in front of private properties.

The situation that led up to adop-

tion of our new policy probably is no different than that of a great many other cities. During the 1920's, our dusty gravel streets were treated with oil. This dust-prevention program continued through the 1930's. However, as the use of the automobile increased, it became obvious that our bumpy, high-crown streets, which were not excavated and brought to grade before the dust treatment was begun, were inadequate. Some of them were 1½ to 2 feet above the gutter line and were in such bad repair that cars couldn't get away from the curbs under slippery conditions.

So, in 1940, we started to use a medium-type paving, removing the crowns and assuming all the cost ourselves. But after four or five years, we found that we had nothing to show for our expenditures.

What we needed was a better type of street because maintenance costs were eating up all our share of state gas-tax revenues and general fund appropriations. High construction costs after the war discouraged property owners from petitioning for street improvements under the Barrett Law.

As a result, the Board of Public Works and Safety, which included the mayor, city attorney, and city engineer, asked our planning commission to recommend a method whereby we could build a higher grade of streets that both the city and property owners could afford.

The Board's first step was to have our streets classified as business, arterial, feeder, and residential, and also to define the widths to be provided. These points were determined by Purdue University and the State Highway Department. Following the classification, the Board of Public Works selected several streets which would "tee off" the program. Our first goal was to put the business and arterial streets in good shape.

Winning Public's Cooperation

Following adoption of the ownership-participation plan, Mayor Philip Banawitz wrote to owners of property on streets that had been given paving priority. The following excerpt from one of his letters shows how we are attempting to win public cooperation with the new policy.

> The Board of Works wishes to include Mechanic Street, between Harrison and Miller, in its 1953 street-building program. I want to emphasize, however, that the improvement depends entirely upon the wishes of the property owners. Therefore, this letter will tell you of what we think will be accomplished by the improvement of your street and will also tell you the maximum amount that the improvement will cost you.
>
> The city will bear the cost of excavation, repair of curbs and gutters, and paving of street and alley intersections. Also, the city will pay 70% of the cost of the actual pavement in front of your house. The Indiana Gas and Water Company will, without cost to you, replace the old gas and water lines, if necessary, to reduce the probability of street cuts in the future.
>
> Rebuilding Mechanic Street as planned will eliminate the high crowns, bumps, and chuck holes; replace the bad curbs and gutters; facilitate cleaning of the street; permit the removal of snow; and cut taxes through reduction of street maintenance.

The letter set a date for a hearing on the matter where property owners were given additional information; and, when the owners were favorable, plans went ahead through regular channels provided by the Barrett Law.

Approval for paving Mechanic Street with concrete was almost unanimous, and it proved to be one of our first major projects under the ownership-participation plan. Funds for city participation in the program come from the $80,000 annual appropriation to the Street Department, approximately $50,000 of which is the city's share of state gasoline taxes.

Indiana law governing assessments for street construction gives the property owners a choice of high-grade materials for their street paving. All streets under this program have been concrete.

Construction Details

The thickness of our new paving depends upon the traffic it must carry. On residential streets, our specifications call for a 5-inch slab, thickened to 7 inches at the edges on streets that already have a separate curb and gutter. If we can place the curb integrally with the pavement, then we use the 5-inch thickness throughout the width and utilize the curb for the added strength at the edge. On the more heavily traveled streets, we use a 6-inch slab, thickened to 8 inches at the edge.

Mechanic Street, built last year, followed the 8–6–8 pattern. We made use of the old curb and gutter that appeared to be in good shape, and placed a 33-foot pavement in two pours, each 16½ feet wide, with a key-way joint between each half. We required dummy transverse joints to be grooved in the pavement every 20 feet, and expansion joints placed at each intersection.

Furthermore, we specified that the cross section of the pavement at all expansion and construction joints be thickened to 7 inches for residential streets, or 8 inches for other streets, for a distance of 10 feet. We required air-entrained cement to be used for the concrete mix that would develop a strength of 3,500 pounds per square inch.

Compton Drive, recently completed, followed the same specifications, except that the thickness of the slab was 5 inches, and that we used the integrally poured curb to strengthen the edge. We also specified dummy longitudinal joints sawed into the pavement about three days after it was poured and placed approximately 10 feet from the street center line.

We use no reinforcing steel in any of the pavements on this program. If the design calls for a 7–5–7 pavement, then we build the intersections a uniform 7-inch thickness. If it calls for an 8–6–8 pavement, then the intersections are uniformly 8 inches thick. Our specifications call for membrane curing unless the temperature drops to the freezing point.

Although our funds are limited, the cooperation of property owners during the first year of the program's operation has urged us to proceed with a long-term paving plan. In fact, our plan has been so favorably received by other Indiana cities that it has been adopted by several of them.

Makes Brush Disposal Simple

BRUSH DISPOSAL is a problem. Once cut, brush is difficult to load. At the dump, it is hard to handle; it creates a fire hazard; it provides a breeding place for rats.

To overcome these problems, Akron (Ohio) purchased a trailer-type Asplundh brush chipper last spring, and our benefits have been many. One man operates the chipper, feeding brush as large as 3 or 4 inches in diameter which the chipper automatically cuts into fine particles and loads onto the truck. Thus one man does a job formerly done by two. Also, because of the compaction permitted, we now haul as much chipped brush in one load as we formerly hauled in three loads.

We have also been experimenting with chipped brush as mulch for shrubbery and tree plantings, particularly in our nursery, with excellent results. But, most important of all, we have been frequently complimented by the public for our efficient disposal of brush.

R. S. Barnhardt
Superintendent of Parks
Akron, Ohio

Laws Affecting Shade Trees On Public and Private Property

By R. R. FENSKA
Author of
"The New Tree Expert's Manual"

TREES are considered part of the land on which they grow. Hence, state laws and municipal ordinances providing for the protection, planting, and maintenance of shade trees vary in accordance with their location.

Cities and villages, as well as the different states, have adopted laws which are similar in purpose but vary as to the details. In some places, for instance, planting of street trees is done by the city; in some by the adjoining property owners; and in some cases a combination of the two methods. Usually when street trees are planted by private owners the city specifies the kind of trees to plant, size of trees, and their location. In any case, however, a private person cannot remove, or even prune such trees without authority from the city or village officials.

In some states, the Town Superintendent has full control of all shade trees on the town highways, but not within the limits of an incorporated village or city. On state highways the Superintendent of Public Works, or the State Highway Commission has full charge of the shade trees. In some states no person or firm is permitted to do commercial shade-tree work without a certificate from the state tree protection examining board.

The shade tree along the highway benefits not only the adjoining property owner but the entire street, and it is upon this idea that all legislation regarding the maintenance of shade trees is based. A man may plant a tree along the street line, but he does not own it in the sense that he owns the trees within his property line. He cannot destroy the street tree, for the whole street would suffer a loss of such action.

A Massachusetts Case

The law regarding the injury to trees on a public highway is well illustrated by the one in Massachusetts which reads as follows:

> Whoever without authority trims, cuts down or removes a tree, shrub, or growth, within a state highway or maliciously injures, defaces, or destroys any such tree shall be punished by imprisonment for not more than six months, or by a fine of not more than $500 to the use of the Commonwealth.

An effective application of this law is the case of a contractor who had occasion to cut a large tree that stood on private land. In falling, it damaged a public shade tree within the highway limits. The tree, a silver maple, about 14 inches in diameter, could not be repaired and had to be removed.

Complaint was made in the police court and the contractor was fined $25. He appealed the case and it was tried by the Superior Criminal Court, with the result that the defendant was fined $50. The town authorities were not satisfied with the decision and an action was brought for damages under the civil statute. The same judge that tried the case in the criminal court, also tried it under the civil statute. The jury this time brought in a verdict for the town for $150. This was probably the first time in Massachusetts that anyone was fined under the criminal statute for damaging a shade tree and made to pay damages under the civil law for the same offense. (Mass. Tree Wardens and Forester Assoc., Vol. 3, No. 3, November 1916.)

When Trees Are Defaced or Damaged

Many people do not realize that in some communities a written permit is required to post notices, advertisements, etc., on public shade trees. In Massachusetts the general state tree law on this point reads as follows:

> Whoever affixes to a tree in a public way or places a notice, sign, advertisement or other thing, whether in writing or otherwise, or cuts, paints or marks such trees, except for the purpose of protecting it or the public and under a written permit from the officer having the charge of such trees, shall be punished by a fine of not more than $50. (Mass. G. L. c. 87, Sec. 9.)

In this day of high speed on the highway the automobile is responsible for much damage to our shade trees along the routes of travel. Many of such trees damaged are located between the sidewalk and the paved area of the highway. Although the ground on which such trees stand may be owned by the city, the abutting property owner has an easement

EDITORIAL NOTE: Reprinted by permission of the American Forestry Association (919 Seventeenth St. NW., Washington, D. C.), from an article in the March 1954 issue of *American Forests*.

(special ownership) in these trees to the extent of the benefit which the trees provide for his property. The abutting property owner is, therefore, entitled to recover damages to the extent of the benefits lost by destruction of such trees.

While the automobile has replaced the horse as a factor regarding injury to street or highway trees, there is still on the books a law in many states regarding injury to trees by animals.

Furthermore, no guy rope, cable or other contrivance shall be attached to any tree or shrub, nor shall any tree or shrub be used in connection with any banner, transparency, or any business purposes whatever, without a permit; nor shall any person pile or maintain against any tree or shrub any building material or other material or debris of any kind. (Art. VI, Sec. 71, N. Y. C. Reg.)

Trees on Boundary Lines

The tree on a property boundary line has given rise to more controversy than any other single case. Such a tree, usually referred to as a "line-tree," belongs to the owners of both properties. Neither may mutilate, destroy, or use it in a manner that will infringe upon his neighbor's enjoyment of it. (The removal of marked "line-trees" by any person from original U. S. Government Land Surveys is punishable by a fine or imprisonment for such an act.)

Exception to the above law is in cities where a line-tree obstructs the construction of legitimate enterprise. In such a case the portion blocking the development, or the entire tree if necessary may be removed by one of the adjoining owners without consent of the other. However, whether such removal is necessary is sometimes a matter for the trial court to decide.

Where a tree is near a boundary line with some of the branches overhanging the ajoining property, the owner of the adjoining property may cut back the branches overhanging on his side of the property line. The branches removed, together with any fruit on them, belong to the owner of the tree.

Prerogatives of Adjoining Neighbors

If the adjoining neighbor exercises his prerogative and lops off the branches extending over on his property he must leave them on the property of the owner of the tree. To keep them would be considered an act of converting his neighbor's property into his own. The neighbor on whose property the branches overhang need not give the owner of the tree any notice that he is going to remove such overhanging branches. Furthermore, the adjoining property owner may also remove any roots on his side of the property line.

Public Utility Companies Held Liable for Damage to Trees

Public utility companies which injure or destroy trees upon private property are liable for the damages inflicted. By virtue of certain statutory provisions treble damages may be recovered in certain cases. In the same way damages may be collected for trees killed by gas from defective gas mains.

Diseased or insect-infested trees which are a public nuisance may be removed by the proper state or municipal authorities upon due notice to the owner of such trees. The cost of such work can be charged to the owner of the land and will be a lien upon the land and added to and become a part of the taxes levied upon such property.

Street trees with branches too low for sufficient overhead clearance for pedestrians or vehicles constitute a danger to travelers. Persons who are injured by contact with such trees may collect damages.

Income-Tax Deductibility

The law which has made many property owners conscious of the value of their shade trees is the one which permits deduction from their federal income tax of the value of trees damaged or destroyed as the result of a hurricane, sleet storm, or other casualty.

In this law there is a distinction between the "value" of the tree or shrub as against its "cost." The loss allowed is the difference between the reasonable value of the entire estate immediately before and after the casualty. It is held that trees and shrubbery are an integral part of the entire estate and not a separate entity.

Recent interpretations by the U. S. Treasury Department have ruled that the loss of a shade tree due to some insect or disease is not deductible from income tax under the above section of the Internal Revenue Act. It has been held that such losses (due to insects or diseases) are the result of progressive deterioration of property through steadily operating cause, and do not come within the classification of "other casualty." For federal income tax purposes, the word casualty denotes an accident or some sudden invasion of a hostile agency.

Appraising Shade-Tree Values

In the author's recent book, *The New Tree Experts Manual* (reviewed briefly on page 171 of this issue of THE AMERICAN CITY), the chapter on "Evaluation of Shade Trees" presents a table for appraising shade-tree values. Here are the "basic values" from this table for shade trees of various sizes—D.B.H. meaning the diameter of the tree at breast height, or 4.5 feet from the ground:

D.B.H. Inches	*Basic Value*	*D.B.H. Inches*	*Basic Value*
6	$ 56	26	$1,062
8	100	28	1,232
10	158	30	1,414
12	226	32	1,600
14	308	34	1,814
16	402	36	2,036
18	508	38	2,270
20	628	40	2,514
22	758	44	3,048
24	906	48	3,620

The table also shows in detail how these basic values may be modified by species -value, location value, physical condition, and by residential value of land per acre.

In the Water Department . . .

Pomona, Calif., Modernizes Accounting System

By CECIL L. MARLER, *City Controller*

FOR the past three years the City of Pomona has undertaken a complete and systematic mechanization of its accounting system to handle revenues, budget controls, warrants, and payrolls.

First Installation

First installed was a Class 3100 National accounting machine, which handles such operations as payroll and warrant preparation, posting to appropriation ledger and revenue posting by funds. A simple removable bar device is used to change from one operation to another. By preparation of the warrants and the warrant register simultaneously a great deal of time is saved in rendering reports and other control data.

Use of the machine for payroll accounting in which the pay check, the payroll warrant register, and the individual earnings records are all handled in one operation reduces the time required for these procedures and greatly simplifies the preparation of the "W-2" forms of the Bureau of Internal Revenue.

In July 1952, the city established a central cashier's system to receive all monies at one headquarters, in the Treasurer's office. At that time a National validating remittance control machine, with 18 separate control totals, was installed. All revenues are coded in the machine by funds, with each separate transaction coded into its proper account. The number of accounts that this machine can accommodate within each fund is practically unlimited.

Posting 13,000 Water Ledgers

As the final "partner" in the system a new 2,000 National utility billing machine was installed in the Water Department. Individual account ledgers are kept for over 13,000 water customers. The machine posts to the individual ledger sheet, the billing postal card, as well as the proof sheet in one operation. This machine is also used for posting credits to certain individual accounts.

The real advantage of the overhaul in our accounting system has been the cut in the cost of operation and the simplification of our procedures. Wholehearted cooperation of the personnel was received during the change over. Operators have been easily trained and have become proficient in a very short time in handling many operations.

The Taxpayer Saves

The net result is a decided savings to the taxpayer and makes it possible to furnish the operating departments and the City Council with prompt financial statements on which to base judgments in the affairs of a fast-growing city.

Whereas in the 10 years from 1930 to 1940 only 2,700 persons were added to Pomona's population, in the next decade (1940-1950) 11,800 were added. This represents a 50% growth as compared with one of 13% in the previous decade.

in the City Treasurer's Office . . .

on payroll work . . .

Six closed-in porches afford rest and enjoyment to the 344 aged and infirm patients at the District of Columbia Village Infirmary.

Hospital or Infirmary?

The Challenge of an Aging Population

By H. DUEY HOFFMAN

WHAT worries city officials in every city in the land is:

1. *Have we enough hospitals now to take care of all the people who need them?*
2. *Can we now or in the future afford to build more hospitals?*
3. *Should we have hospitals for the chronically ill?*

Medical science has prolonged the life of millions of people over 60 years of age who would otherwise not be alive today. Are they ready for this extended life, physically and mentally? Will they be able to care for themselves as long as they live? Will they be able to have medical and hospital care? Can their children or other relatives be responsible for them? Will the chronically ill increase or decrease in number? Can they be rehabilitated and returned to the community?

The above questions are now worrying millions of people of all ages, personally and as taxpayers.

Even with the tremendous increase in hospital, medical, and surgical insurance, and the health and welfare funds of the labor unions, very few persons can afford to pay $15 to $20 per day for a hospital bed plus medical care. Those who can pay do not wish to live in a hospital with its necessary rigid routines. These persons do not belong there. Hospitals are not homes for patients who could be cared for elsewhere.

The experience of one city in facing up to these problems offers encouragment to other communities. Washington, D. C., has for five years been working on a new approach. In the nation's capital—long a proving ground—it has been demonstrated that preventive and corrective medical care, such as rehabilitation, can do very much to reduce the amount of chronic illness. Early screening to detect symptoms, plus corrective measures, and regular examinations, are preventive medicine. Rehabilitation of patients with advanced chronic illness, such as heart conditions, strokes, diabetes, and old injuries, can enable the patient to care for himself, may even return him to the community and possibly to gainful occupation.

Transformation of Blue Plains

Recently, Washington dedicated the District of Columbia Village Infirmary at the Municipal Home for the Aged and Infirm. This place, known as Blue Plains, a kind of dumping ground for the aged and infirm, is having a transformation. The 50-year-old "dormitories" are still there. So is the old infirmary, which had wards containing 40 beds each, but is now put to use as a much-needed chapel, library, and recreation room for the city's "guests."

At the recent dedication of the Home's new Infirmary, hundreds of people viewed with astonishment the bright, attractive corridors and rooms with pastel-colored walls looking nothing like a hospital. The neatly designed nonskid floors of concrete, the comfortable wooded handrails against the walls and down the stairs, were new ideas.

No rooms contain more than six beds; many have three; a few have one bed, for a critically ill or severely suffering patient. Some beds are the usual hospital type; others are similar to what might be found in a home.

The diet kitchen, closed in to avoid the spread of odors and noise, with their stainless-steel equipment of new design, pleased the crowd of visitors. The kitchen in the basement, also with the latest equipment, including five walk-in refrigerators and one walk-in deep freeze, will adequately serve all the patients in the Infirmary, even when fully occupied, the guests in the Home dormitories, and the staff.

The recreation rooms, cheerful and comfortable, with big windows curtained attractively, provide the patients with a place to view television, listen to the radio, play cards, sew, talk, listen to amateur entertainment.

The long, sunny, closed-in porches provide restful relaxation. Food trays can be served to patients who wish to spend more time in enjoying the sun, the view, and the company of other patients.

Some Cost Figures

This new Infirmary cost $2,800,000. It was paid for by the tax money of the citizens of the District of Columbia, who, however much they might approve the project, had no choice in the matter; for Congress spends their money for them and has done so since they lost the right to vote back in the '70's.

The Infirmary has a total of 344 beds; so the average cost per bed is about $8,000. The average cost of a bed in a hospital built today is $20,000. It is less costly to care for the chronically ill in an infirmary than in a hospital.

Who Are the People There Now?

Since the day of its opening, 130 patients from the 470 guests at the Home for Aged and Infirm have been removed to the new Infirmary. Others will come from nursing and convalescent homes, if they wish. Some will come from the mental hospital, Saint Elizabeth's, where they have been as senile, not as mental patients. The 344 beds will soon be filled up, and no doubt a waiting list will follow. Vacancies are more rapid in the Infirmary than in the Home for Aged and Infirm, since the ages of the patients are from 75 to 85 years and over.

Of the 314 guests left in the Home, all are over 65 years; the average age is 70. Between 50 and 60 of them have no income whatever, other than what they now receive for a few hours' work at the Home—sweeping, cleaning, assisting attendants, etc. A little payroll of from $5 to $20 a month has been set up for each worker aid. Some are self-employed, like the man who runs a newspaper route in the Home.

Of the total number in the Infirmary, 80 to 90 are wheel-chair patients, and 30 are visually handicapped. This means that there must be enough attendants and aids to help these people in bathing, dressing, and moving about. They represent all levels of social and economic life. Some are highly intelligent. Some have homes, but are handicapped and unable to care for them and for themselves. Some are not handicapped but have no homes. Some have been rejected by their families, who are unable to take the necessary care of them.

The people who are eligible for both the Home and its new Infirmary, according to Gerard Shea, Director of Public Welfare, are the following:

1. The indigent, a person who is without sufficient resources to secure necessary care.

2. The infirm or disabled person who has some physical impairment, disease, or loss that makes it impossible for him to have useful or gainful employment, such as holding a job or doing housework.

3. The aged, which means persons who have reached the chronological or physical age of 65 years.

Persons who are aged and infirm but not indigent are admitted if there is room. A person who has resources, such as a lump sum of more than $1,000 or an income of more than $150 per month, is not eligible, as a rule. However, his condition and the availability of proper care at a cost he can afford may make possible his certification to the Home for the Aged and Infirm.

What Can Be Done

"Our main objective is not to rehabilitate patients so as to make them employable," says Dr. Jack Kleh, medical director. "We want to make them comfortable and happy and able to care for themselves as nearly as possible, and to prevent disability. They are screened before they come here. Any who can be rehabilitated and returned to the community are sent to Dr. Josephine Buchanan, Director of Rehabilitation at the District of Columbia General Hospital. Chronic illness discovered early might be prevented and would reduce the load not only here but in all hospitals."

There are a few who can be improved to the extent that they can do a little work. There is cooperation with the Chief of the Vocational Rehabilitation, Tom Rathbone, to see what can be done.

"We are starting a little project out there at the new Infirmary—growing fishing worms. It is a profitable business and not hard work," says Mr. Rathbone.

"When people have nothing to do they deteriorate mentally as well as physically. They become 'vegetables,'" says Dr. Kleh. "Radio and television help to prevent this. The work of the volunteer entertainers helps. Retired people, healthy and active, can find rewarding work in giving their services evenings to feed those unable to feed themselves, and doing other work that attendants usually do."

The feeling of being accepted and not rejected goes a long way toward rehabilitation of mind and body, Dr. Kleh thinks.

Preventive Work Essential

Unless preventive work is done, we shall never be able to meet this challenge of an aging population. Early diagnosis to prevent chronic illness, rehabilitation where prevention has been neglected, home care where possible, regular medical examination to detect signs of impending illness—these are necessary. Add to these work that one is capable of doing. People must be occupied.

"The cost of medical care must be within reach or the number of needed infirmaries in the country will stagger the taxpayer. The load of caring for older people must be shared by all the taxpayers and not carried wholly by the younger members of the family." So says Dr. Joseph Fazekas, Chief of Staff at the D. C. General Hospital.

Older people are rapidly using up their savings in paying for the high cost of medical care, for most commercial health insurance eliminates chronic illness. Soon their savings are gone and there is no infirmary in the city to which they can go.

Home Care Programs

The English people have worked out a plan by which persons receive both housing and medical care. They live in cottages, each with its garden, and busily take care of themselves as part of the community. When acute illness overtakes them, they are removed to the hospital. When they reach convalescence they are admitted to the infirmary. When able, they are returned to the cottage home. It is expected that the 50-year-old dormitories at the D. C. Village Home for the Aged and Infirm will be replaced within the next 10 years by cottage type group dwellings similar to those in England.

The home-care program, started at Montefiore Hospital in New York City, should be extended throughout the length and breadth of the land. This consists of a visiting physician, therapist, nutritionist, and nurse, and whatever other service may be needed. It is an extension of the Visiting Nurse Service started 50 years ago. This service can be set up for less than $4 a day per patient, which is less costly by far than the $15 to $20 per day for a hospital bed, plus the medical care.

Department Chief A. P. Orban (right) and Deputy Chief F. E. Cockey (left) check an electric flood lamp with Dundalk station's Lt. Harold M. Evans.

Radio and Telephone Dispatch Baltimore County Apparatus

By A. P. ORBAN, *Chief*
Baltimore County Fire Department

Baltimore County Fire Department (Maryland) protects the city's 310,000 inhabitants, its realty values exceeding $875,000,000, over an area of 615 square miles. The department's 1954 budget totals $1,118,000, sufficient to maintain 10 well-equipped stations with salaried firemen and 28 volunteer stations.

If you visualize the face of a watch, the 10 paid stations would be positioned about every five minutes, starting at seven and proceeding clockwise to five, with Baltimore harbor accounting for the missing 10 minutes. Central headquarters at Towson, "located at 12 o'clock," is three miles north of the city line. At headquarters all activities are centered and from this station battalion chiefs direct the activities of the Eastern Division (five stations) and the Western Division (five stations).

The department works a two-shift day, 10 hours daytime and 14 hours nighttime, with 226 men employed. Every male employee of the department is a qualified fireman.

Every paid station has one 750-gpm pumping engine with a 300-gallon water tank. Five additional engines are housed in stations adjoining areas of dense population or industrial plants. In addition, a 500-gallon tank truck and a 65-foot aerial ladder truck are available for use anywhere.

The Baltimore County Fire Department has a street-box alarm system with approximately 450 alarm boxes throughout the metropolitan area of the county. The system is divided into three separate systems with main headquarters at Towson and subcontrol centers at Catonsville and Dundalk. The three systems centers are tied together with relay units causing signals to be sounded throughout the entire system. All equipment is Gamewell.

Every fire truck carries two 15-pound Kidde carbon dioxide extinguishers, one 30-pound Kidde dry chemical portable, and 2½-gallon water, foam, and soda acid extinguishers. The paid department pumpers are of 750-gpm capacity as follows:

In Active Service
8—Seagraves
2—American La Frances
1—Ward La France
3—Macks

On Reserve
1—Seagrave
3—American La Frances
1—American La France Tank Truck

In an emergency, almost 3,000 volunteer firemen are available to man the 63 vehicles of the 28 volunteer departments.

Radio-Telephones Double Efficiency

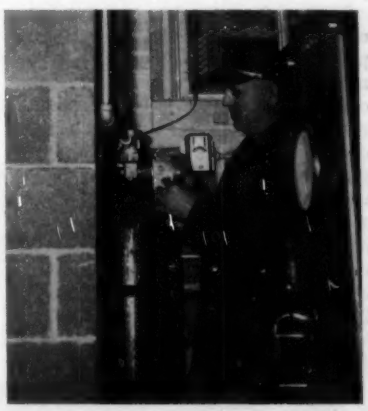
All fire calls are received at the Towson Station and relayed to the appropriate paid station(s) by radio-telephone, recently installed. This report is followed up by a direct line telephone call. Similarly, radio-telephone circuits to the volunteer station houses permit any volunteer alarm to be sounded automatically. The location of the fire then is given by radio-telephone or telephone to the first volunteer reporting to the station.

The radio system is controlled by a 250-watt transmitter with a standby 250-watt transmitter available at all times in case of trouble. All radio equipment in the fire service in both the paid and volunteer companies is Motorola. There are at present 106 two-way mobile 60-watt units in operation.

Every vehicle in both the paid and volunteer department has radio-telephone receiving and transmitting equipment which operates on 46.46 megacycles. Every station has a receiver. Constant and direct communication is possible with any volunteer or paid vehicle out on the road. It is possible to direct a truck to a fire by radio-telephone from detailed road intersection cross-indexed maps of the entire county which are kept at the Towson Station's dispatching room.

The fact that this call system doubled the efficiency of the department caused us to give special attention to the factor of continuous service.

Should fire flash, rate-of-temperature-rise fire detectors immediately trip a 75-pound cylinder of carbon dioxide. Under its own pressure, the carbon dioxide floods from its cylinder, passes through piping, and discharges from Multijet nozzles as an inert gas into the radio room and the auxiliary generator space. By displacing oxygen to a point insufficient to support combustion, the fire is smothered.



Deputy Chief Cockey inspects the Kidde carbon dioxide system guarding the department's vital radio equipment.

The City Tells Its Story

Edited by PAN DODD WHEELER
Executive Director, Government Public Relations Association

Silent Service Not Enough; Municipal Utilities Must Show, Sell, Tell Citizens

By GEORGE C. SOPP
Joint System Head and Assistant Manager
Los Angeles Department of Water & Power

Directors of municipal utilities realize that relationships with customers and with the public must be nourished not only with good service, which is basic, but also with a sound public relations program that is realistic, continuous, and that includes training in public relations for every employee. Customers and the public must be helped to recognize the service character of the utility, to feel confidence in the utility, and to have respect for this part of the municipal operations.

A Treasured Asset

Municipal utilities management knows the utility must gain and maintain the support of its customers. This is needed in day-by-day operations. It is also a treasured asset when politics and other pressures are brought to bear on the public utility.

Where does the responsibility for establishing good relations with the public rest? First—with management, of course. As a top business executive reported recently, "Public relations cannot be separated from good management because sound public relations is a direct reflection of management." Public relations are also a responsibility of every employee of the municipal utility. Each phone call, each letter, each time an employee is recognized as a part of the municipal utility—even off the job—a relationship, either for good or evil, is established with the public.

What are some of the major points of contact between utility people and their customers and the general public? Recognizing these is necessary because the points of contact represent opportunities for establishing firm and friendly relations with the public.

One point of contact is "on the road." Municipal utilities people have many kinds of contact on the road . . . during construction or repair work when roads or portions of roads are closed to street traffic, and in any routine assignment when the driving of a utility department vehicle is involved.

Nearly all vehicles belonging to the municipal utilities are readily identified by the public. They may be a certain color, carry the city seal, or be marked in other striking ways. Drivers and riders in such vehicles are "in the spotlight" at all times. A single act of discourtesy or an infraction of a traffic rule will be noted with disapproval by many people, and may color their entire attitude toward the utility. Proper driving, road courtesy, obedience to traffic regulations will, on the other hand, reflect favorably on the utility.

With the Customer

Municipal utility representatives have a maximum opportunity to create good will for the department in their contacts with the customers. Such a representative's success depends on his knowledge of the work to be done, his attitude toward that work and toward the department, and his desire to be helpful to the customer. All events relating to customers are the basis for customer opinion . . . and for public opinion.

Customer requests for information—either by telephone or in the utility office—must be handled expeditiously, with a minimum of red tape, and without the customer feeling he is getting the "run-around." This means that employees making customer contacts must know company policy, company rules and regulations, company operational procedure and schedules. Or the employees must know to what person or department the customer may be referred for such information.

In the field, utility employees are often required to enter or work on private property—in homes, basements, rooftops, lawns—of customers. Employees also work on rights-of-way and properties adjacent to customer properties. In both cases, extreme care must be exercised to assure that neither the work being done nor the equipment used damages this private property. When a job has been completed, the lack of "job evidence" is proof that the work was done in a tidy, thorough manner. Evidence of carelessness can destroy the effect of an otherwise competent job by the utility crew.

Wherever the contact, no utility employee should make a promise to a customer unless he intends to follow through and feels reasonably certain he can make good the promise. Once a customer finds he cannot trust an individual representing the utility, he will begin to distrust the utility.

In addition to knowledge of their job, of the utility's function, and of their relationship to the public, utility representatives are most effective in customer contacts if they are neat, cheerful, willing to serve, and, above all, able to listen to and be con-

cerned about the customer's problem.

Management has the responsibility for recruiting people with these qualities and then for training them and keeping them trained. The planning and effort involved in recruiting and training pays off handsomely in good relations with the public.

There are two areas of contact between the utility and the public on a community-wide basis. One involves the official activity of the utility when it affects a whole neighborhood or community. The other involves the unofficial activity of individuals in the utility's employment, outside their regular working hours.

When construction, expansion, or improvement is undertaken it will affect more than a few customers or a few people. Those it will affect must be told—in advance—of plans the municipal utility has made. The Los Angeles Water and Power Department maintains such contact by letter, brochure, and pamphlet directed to persons who will be touched by its work. Such publications tell people about the work, what is to be done, and the project dates, as well as pointing out benefits to the community to be derived from the project.

The utilities cannot expect customers or the general public to graciously accept interrupted service, closed streets, noisy construction, unless they are first notified, in an understandable manner, about what to expect and why.

Community Contact

Much of the success of the Los Angeles water and power utilities during the past 50 years is traceable to the second type of community contact—the activities of utilities' personnel in the community as citizens, as neighbors, as church members, as lodge brothers. Utilities people are connected in the public's mind with the utilities—both during working hours and the rest of the time. What these employees do that is constructive, helpful, and neighborly is noted—and makes friends not only for the individual involved but for the utility also.

Therefore, as has been done in nearly all major private businesses, management must encourage participation of its people in the schools, churches, and service groups of the community if it is to realize its public relations potential. Such participation—and the fostering of it by management—will make better citizens and workers of city utility men.

The public relations effort, and especially this last-mentioned phase of it, points up the need for enthusiastic, inspired leadership by municipal utility management. No . . . public relations *cannot* be separated from good management. It must start with good management.

Public Relations Ideas—For the Utilities

Booklet, on general principles: issued by Ocala, Fla., to tell residents what their annual $136,000, spent on the water department, buys. Sample: "Water is free—you pay for its collection, treatment, and distribution. . . ."

Animated display: built by a plant superintendent in Mt. Clemens, Mich., consist of a portable exhibit board on which the various units of the water-purification plant have been drawn. A set of "Mechano" motors moves wheels which trace the course of the water through the system. The animated display cost little, and has been used in scores of talks and exhibits.

Water and beauty: was the subject of a booklet issued to the public by the St. Louis (County) Water Company. The booklet described the relationship between good gardens, lawns, and flowers and water; contained a guide showing when and how best to water garden and plants and other pertinent information.

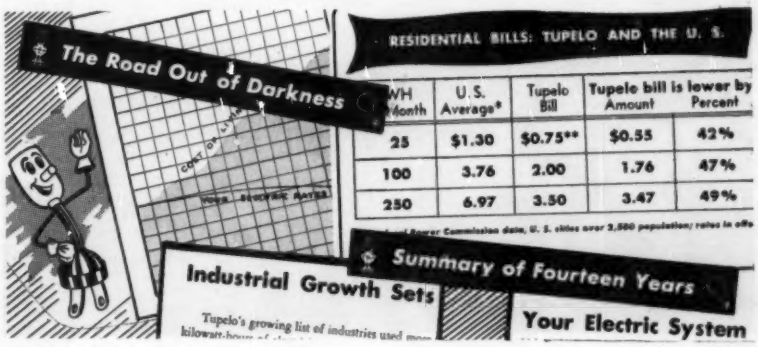
Hall displays: widely used in utility buildings and city halls should be timely, colorful, attractive, and should carry a message. Displays must be changed or refurbished not less than four or five times a year. One effective display, suitable for outdoors or inside, consists of a large wooden penny atop shelves which contain 32 clean, water-filled jugs. The display carries this sign: "Biggest bargain in town—32 gallons of water for one cent!"

Reddy Kilowatt and Willing Water Are Star Salesmen

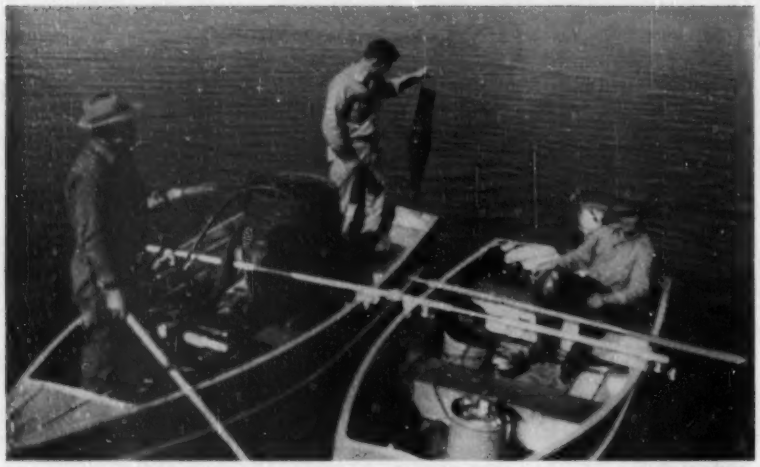
An electric light plug and a drop of water, known as Reddy Kilowatt and Willing Water, are personifications of the power and water utilities, respectively. Personification, or the giving of a human personality to services or ideas, is an old trick of salesmanship. A "personality" that has human qualities "gets across" to the public.

Reddy Kilowatt and his drum (on the page masthead) paraded from the pages of the annual report of the Meriwether Lewis Electric Cooperative in Tennessee. The report "Out of Darkness into Light" won first prize in an annual Tennessee Valley competition. Photo-filled, the report shows how one family it serves has benefited from the electric utility's operation. Reddy is used throughout this report.

Willing Water is the personality copyrighted by the American Water Works Association and used, among other places, in an Ottumwa, Iowa, report "Water, the One Great Bargain." Willing Water is the promoter of the slogan, "Silent Service is Not Enough," and his face is familiar to water customers throughout North America.



Electricity On Parade: **Reddy and the chart (left), and the chapter titles, are from the 1953 Meriwether Lewis Electric Cooperative report. The chart (right) and headlines are part of the most recent report of the Tupelo (Miss.) Electric Department. These reports were among those entered in an annual contest for the best electric department report in the Tennessee Valley.**



The boat on the left carries the copper sulphate application equipment. The operator at the stern holds a sampling container for testing the sulphate concentration.

Out With the Algae

Eau Claire, Wis., clears up a persistent "pea-soup" lake problem, hitherto considered insoluble, with controlled, heavy doses of copper sulphate, without damage to fish life

By HAROLD F. ANDERSON
Administrative Officer
City-County Health Department
Eau Claire, Wis.

Half Moon Lake is a recreational as well as scenic asset to Eau Claire and remains a valuable portion of its park system so long as the algae can be kept under control.

A CITY with no more than 38,000 people, situated beside a beautiful 147-acre lake is fortunate indeed. But such a civic asset can quickly become blighted when microscopic growths, known commonly as algae, begin to use the lake as living quarters and redecorate it so that it resembles a huge bowl of pea soup.

However, a "no admittance" sign, in the guise of properly applied copper sulphate, can be hung out for these unwelcome visitors. Algae, such as Microcystis, Nostoc, and Fragilaria, are sturdy and persistent and not likely to pay attention to halfway measures. But, in Eau Claire, they have learned that when we tell them to leave we mean it.

Our lake is named Half Moon Lake. As suggested by its name, it is a horseshoe-shaped body of water lying entirely within the city limits. It is largely spring fed with the exception of a small creek on its west bank and a few storm sewers on the east. Its average depth is 9 feet.

In the past, the lake had served as a log reservoir for local lumber interests and, as a result, had a substantial amount of sawdust, bark, and other wood fragments on the bottom and banks of its two extremities. Elsewhere, the lake bottom and banks are of rock and sand.

In recent years, the lake has been used for recreational purposes, such as swimming, boating, and fishing. Adjoining the lake is a city park, heavily wooded, with excellent facilities for football, baseball, tennis, and picnics. Frequent laboratory analyses have consistently revealed a sufficiently low coliform bacteria count to make our lake safe for swimming purposes at all times.

Correction Needed

Nevertheless, despite the lake's natural beauty, accessibility, and other attributes, the people of Eau Claire have long and bitterly complained about their lake. Excessive weeds and algae, particularly during August, have made the lake surface obnoxious with scum and offensive odors. Treatment adopted in the past, using copper sulphate, had been discouraging. Apparently, we were using either an insufficient amount, or improper methods of application.

On August 1, 1952, the city acquired a new city manager, David D. Rowlands, who arrived just as the lake was undergoing its pea-soup transformation. By early spring, he had learned of the often-expressed wish that "something be done about Half Moon Lake." He also was aware of the past failure to correct

this recurring unpleasant condition.

With the approval of the City Council, he retained the services of Dr. B. Domogalla, a biological chemist, to make a study of this problem with the cooperation of the City–County Health Department.

By May 30, 1953, typical summer plankton conditions were prevailing and scum-forming algae were beginning to appear. Microscopic examinations showed such minute algae as Microcystis, Nostoc, and Fragilaria drifting about in clusters.

A few weeks of warm weather and proper food would obviously encourage these algae to create the formation of surface scum that would later decompose and produce offensive odors. The long-string type of algae were in the minority. Biological findings produced evidence of considerable fish-food animals such as Daphnia and Rotifera.

Chemical Analysis

A chemical analysis indicated that the lake water showed no typical sewage pollution, but that it did provide sufficient dissolved material for the sustenance of water plants and animals. Moreover, it included an adequate supply of phosphorus, nitrogen, potash, and enough alkalinity to encourage the growth of plankton. Dissolved oxygen content was found to be sufficiently high for all kinds of fish.

CHEMICAL EXAMINATION
(*Range in parts per millions*)

Dissolved oxygen	7.5 – 8.5
5-day BOD	8.0 –25.0
Total alkalinity	45.0 –75.0
Total nitrogen	0.65– 0.82
Total phosphorus	0.11– 0.25
Total potassium	0.05– 0.15
Chlorine as chlorides	0.90– 1.90

June 26, 1953, the city decided, was as good a day as any to attack this fast-approaching problem. A Wisconsin state permit restricted our ammunition to a total of 240 pounds, or 0.3 ppm of copper sulphate. At this time, the total algae count throughout the lake ranged from 550,000 to 2,500,000 per liter of water. To counteract this, we used pressure equipment to apply our full quota of 240 pounds, using a granular grade of copper sulphate crystals supplied by the Tennessee Corporation.

On the next day, we found that the algae count had taken a substantial setback. But they quickly recovered strength. On July 5, the surviving algae had again become so numerous that a surface scum had again formed. So we applied another 200 pounds of copper sulphate to the lake surface. Then, on July 6, we sprayed under pressure about 850 gallons of concentrated commercial sodium arsenite, which contained about 4 pounds of arsenic per gallon, over the dense weed areas. Within a few days, the weeds were dying and after a week had entirely disappeared, leaving these rooted weed areas cleared of their excessive and obnoxious growths. There was no loss of fish.

More Copper Sulphate Needed

However, one point was plain—200 pounds of copper sulphate was not enough to discourage the algae in Half Moon Lake. By pleading the seriousness of the situation, we finally obtained a change in the state permit permitting us to use 800 pounds for each treatment.

Armed with our new permit, we set out on July 28 to spray 2½ times our normal dosage, or 600 pounds on the lake surface. Then, on July 30, we applied all that the permit would allow. These two applications let the algae know that we meant business. If they wanted a place to live, we were determined that they choose another lake, outside the city limits.

To make the application of copper sulphate, we use equipment developed by the Applied Biochemists Company, of Butler, Wis. It consists essentially of a small boat carrying a barrel, a pressure pump, a spray bar, and a supply of copper sulphate.

We place several bags of the chemical in the barrel and mix it with lake water to produce a saturated solution. Then the pump sprays the solution through the distributor nozzles over a distance of about 30 to 50 feet.

A carefully designed system of valves permits the pump to introduce fresh lake water into the barrel while pumping the chemical solution into the distributor arm.

By the afternoon of July 30, the algae count of 1,750,000 per liter had dropped to an average of 800,000. The next day the count had dropped to 250,000. Within another two days, the lake water became clear, a surprising event for Half Moon Lake in August. Moreover, these larger copper sulphate treatments did not injure the fish life nor did the dissolved oxygen content get below the danger point despite the tremendous decay of the algae scums.

Warning Note

One word of warning is worth passing along: the copper sulphate solution should be diluted with lake water before spraying so that no fish or small fish-food animals will be killed. This danger of overtreatment is the reason that many states penalize persons or cities who spray chemicals without obtaining a state treatment permit.

At the same time, one must also be careful not to spray a solution so diluted that it will not kill the algae. Each state sets the concentrations of chemical solutions allowed to meet specific local conditions.

All this points to an obvious conclusion. The answer to "pea soup" lake water lies in adequate chemical treatment. Anything less is bound to be a disappointment. With this treatment we have made Half Moon Lake into one of the most attractive recreational areas available to any city in northwest Wisconsin.

The price we have to pay ranges between $500 and $1,000 annually. This is far less than any city of this size would expect to pay for the privilege of using such a recreational facility.

No Sale

WATER-PIPE manufacturers missed the sale of 2,400 feet of 24-inch pipe to the Cincinnati (Ohio) water works recently. The loss may be attributed to the city's purchase, in 1901, of 24-inch, cast-iron, bell-and-spigot pipe from the U. S. Pipe and Foundry Company. Until 1948 when the Centriline Corporation cleaned and lined the mains with cement mortar, these lines were ignored.

Last year, Water Superintendent C. A. Eberling removed this half-century-old pipe in order to install a new 42-inch steel main. The pipe and lining were in such excellent condition that crews merely cleaned and repainted the exterior with bitumastic coating, and are now placing it as new pipe in a current extension.

The best suggestion Superintendent Eberling can give to pipe salesmen interested in supplying the city with replacements for this particular line is to leave a memorandum for their great-grandchildren to pay a call on the department in 2004. This suggestion, he states, applies to pipelining salesmen, too. However, he added, even then may be premature.

Before the City Beautiful Commission went to work, Memphis' Riverside Drive was a dumping ground and an eyesore. Note debris in right side of photo.

Tree planted grassy slopes and rose bushes now line the rail of the Drive, which has become one of the spots to which Memphians can and do point with pride.

Beauty, Cleanliness, and Fire Prevention: Our Jobs

By FRANCES CROUCH
Staff Director of Public Relations
City Beautiful Commission
Memphis, Tenn.

ROSEBUSHES bloom today on the very sites of former dumps in Memphis, Tenn., thanks to the efforts of one of the hardest working bunches of housekeepers to be found in an American city.

In 24 years of successful operation, the Memphis City Beautiful Commission has grown into an organization of nationwide acclaim. Visitors from Wisconsin to Florida have studied the Memphis Plan and have made adaptations suitable for their own cities.

It all began in 1929 when the Honorable E. H. Crump, then mayor, realizing that many visitors to Memphis saw only dumps and eyesores from the train windows and along through routes, appointed a board of Memphis women to serve as official housekeepers for the city.

July 1, 1930, the Commission was created by a municipal ordinance, and an appropriation of $1,500 was made as an initial budget. The late Mrs. E. G. Willingham, dean of Memphis clubwomen, was appointed first chairman. Mrs. William B. Fowler served as vice-chairman from the Commission's inception until January 1, 1936, when she became chairman.

Under Mrs. Fowler's leadership the Commission has matured into an organization that has the support of the citizens of Memphis and the confidence of the city government. The appropriation for 1954 is approximately $100,000. Newspapers, radio and television stations, schools, and churches all support the program wholeheartedly.

27 Member Staff

In an up-to-date white brick workshop transformed from a stable-garage, the Commission staff, still composed entirely of women, has grown from one paid secretary to 27 members. Every staff member has her own desk and access to modern office equipment. Twenty staff members use their own cars for inspections—for which they are allowed $30 per month in addition to a limited amount of gas and oil.

Field inspectors report at 8:30 each morning, receive instructions for the day, and go out into the city's 66 wards to check on unsightly conditions and appeal to the civic pride of the owners to remedy them. Inspectors telephone their locations in to the office at noon and return at 4 p.m. to prepare their daily reports.

The office is a daily bee-hive of activity. Frequent contacts are kept with hundreds of organizations that cooperate closely with the projects of the Commission's extensive program. Staff members are kept constantly

busy preparing material for the more than 200 volunteer members.

In addition, one woman in each of the city's wards serves as a district chairman, working directly with the City Beautiful field inspectors. Informative programs are presented at monthly luncheon-meetings at which each person attending, whether volunteer or staff member of the commission, has to pay for her own lunch.

Annual Campaign

The annual spring Clean-Up, Paint-Up, Fix-Up Campaign, which receives promotional and financial support from the Commission, and which has as its objectives the safeguarding of health, the promotion of safety, the prevention of fire, the improvement of property, and the betterment of citizenship, has become one of the city's most popular improvement projects.

Memphis, winner of 14 first-place trophies offered by the National Clean-Up, Paint-Up, Fix-Up Bureau as the cleanest city in the nation, in 1948, 1950, and 1951 won the Ernest T. Trigg National Award in the Nation's Cleanest Town Contest.

In 1952 Memphis was acclaimed Grand National Champion and was placed in a special category reserved for cities that have been three times national winner of the Trigg trophy. Additional recognition in the championship class was afforded the city again in 1953.

But the hunger for cleanliness and beauty is not seasonal in Memphis. In January, for instance, special emphasis is placed upon putting up house numbers easily visible from the street.

The Commission begins to stress "spring planting" in March, when Memphians start focusing their special attention on the setting out of crape myrtles, the city's official shrub. Alley beautification also receives March emphasis, and a contest is conducted annually, offering rambler rosebushes to dwellers along the city's cleanest and most attractive alley.

A huge summertime publicity campaign is waged urging citizens to cooperate in making Memphis "The Flyless City." Millions of flies are eradicated annually through the sale of Big Stinky Fly Traps, introduced to the city by the Commission in 1950.

Summertime also is the season during which field inspectors answer the greatest number of complaint calls and work hardest to improve garbage areas and collections. Vacant lots are cut and property is repaired before winter weather sets in.

The Commission stresses the removal of eyesore spots. A contest is held to urge Memphians to create backyard areas for garbage containers, with cash prizes awarded winners. In July, the annual picnic is held, to which several hundred persons who have assisted in the work of the Commission during the past 12 months are invited. This party, held in the City Beautiful garden, is the only purely social event at which the Commission entertains each year.

Playground Contest

During the summer, the Commission encourages the development and improvement of playgrounds and recreational areas. An annual playground contest is sponsored for the creation of the most attractive exhibits, and engraved silver trophies, offered by former Mayor Crump, are presented to winners at the August playground festivals.

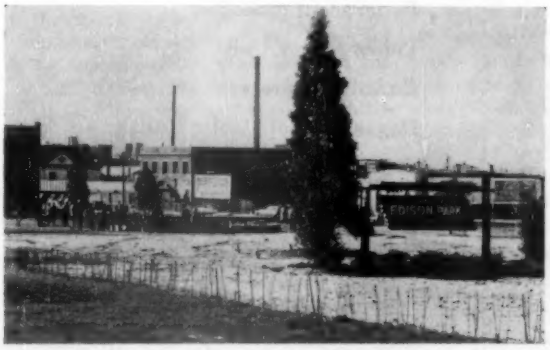
A City Beautiful booth in the Woman's Building is a highlight of the Mid-South Fair early each autumn. Volunteer members staff the booth, where brochures are distributed to acquaint more citizens with the work of the Commission. Also on display are staff-prepared exhibit books entered in the National Cleanest Town Contest in Washington.

October is Fire Prevention month, and the Commission cooperates closely with the fire department to emphasize the slogan, "A clean home seldom burns." The Commission urges the systematic spring and fall cleaning and inspecting of attics, basements, and stairways both in homes and public buildings and is proud to have helped reduce Memphis' fire loss to less than $2 per capita as compared with over $5 per capita nationally. As a result, Memphis' fire-insurance rate is one of the lowest in the nation.

The Commission launches a city-wide publicity program for Arbor Month to promote the planting of thousands of young trees to keep Memphis a city of trees. Public planting ceremonies are planned during November at various schools, churches, and institutions, and an accurate record is kept of all trees set out.

A vast amount of clerical work and publicity is required to carry out the Outdoor Christmas Lighting Contests, co-sponsored by the Commission and *The Commercial Appeal*, which attracted more than a thousand entrants in 1953. Visitors as well as homefolks are thrilled each yule season by carefully mapped tours through beautifully illuminated areas of the city.

Mrs. Fowler, chairman of the Memphis City Beautiful Commission, was elected president of the National City Beautiful Conference, chartered and established in Memphis in April, and she will be the first chairman of the newly created City Beautiful Division of the General Federation of Women's Clubs. These honors she considers tributes to Memphis' successful campaign to reach ever higher in beauty, health, and safety.



A small barren triangle at an intersection in the city's uptown district was selected for landscaping and for beautification.

Within four months time the triangle was transformed into a verdant area—a haven in the heart of the business district.

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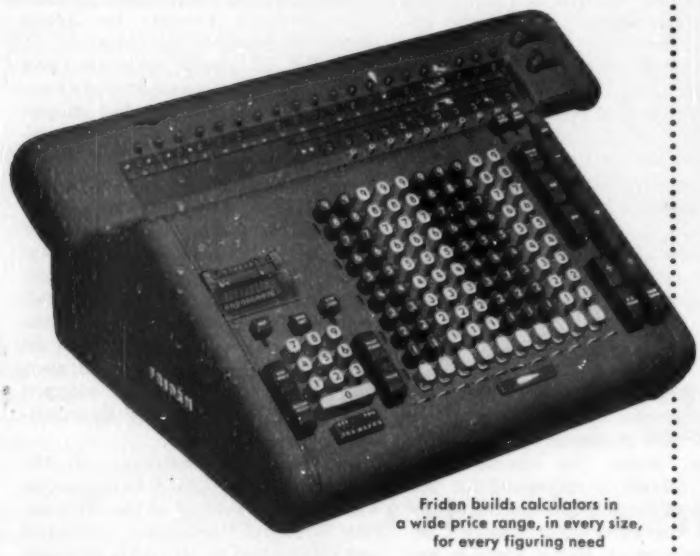

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City Manager's Role in the Community

By CARLETON F. SHARPE
City Manager
Hartford, Conn.

DURING the last 25 years there has been a change in the general principles outlining the responsibilities of managers in city government. In the early days of the council–manager movement it was considered possible and desirable to separate the policy-determining function from administration. The council was to be responsible for the initiation and determination of policy, and the manager carried such policy into action through the administrative organization. As cities have had more experience with the plan and as local government has become more complicated, managers have been asked to help councils determine community policies.

The full-time manager and his staff are in a position to obtain information and to grasp its significance, and this sort of understanding of community problems is essential to sound decisions.

The manager must recognize his responsibility to share this information with his council, so that they may determine sound and acceptable programs. The manager and the council should work as a team in developing projects and plans designed to promote the general welfare of the community.

The average city of today is challenged with complex problems. Shifting populations, inflation, and traffic are just a few of the growing complexities of urban life that have fostered this changing relationship between manager and council.

Continuity of Management

One of the greatest advantages of the manager plan has been and is the continuity of management provided by the appointed manager and his staff. The average councilman, elected for a few years, does not have the opportunity to grasp the full impact of such forces upon the community. They need the help and advice of the administrative staff, if they are to make progress in the solution of these major issues during their administration.

The manager can and should outline for the council desirable goals to be achieved, but he should not make an issue of his proposals. Meeting such issues and working together on them is a *must*, but if the manager cannot convince the elected representatives of the people that a certain plan is logical, he must devise another course of action or do what the council decides as a final policy. Once the council has decided and acted, the manager assumes the responsibility as an administrator for selling the policy to the community.

Changing Concept

In facing this changing concept, the manager must not permit himself to assume responsibilities that rest clearly in the city council. Managers need to draw a clear distinction between community leadership dealing with community planning and programming — policies which are part of the over-all management responsibility of any municipal corporation — and political leadership dealing with persons. These are parallel leaderships, each enhancing the strength of the other.

The fact is that most cities which have adopted the council-manager plan are looking to it for better leadership as well as improved administration.

It seems to me that the first step in creating the proper understanding of the manager's function as part of the leadership team, is to take some specific function or problem and analyze it fully. After we have gathered as much information as we can covering the subject, an effort should be made to discuss the findings with the council.

In the first instance it would be desirable to have such meetings informal and to avoid making final recommendations until the council has had a chance to consider the facts. In fact, everything should be done to point out the spirit in which the problem is being presented and to let the membership of the legislative group feel that their help is needed in solving the issue.

It has been my experience that once a general issue has been so presented, there will be help coming from many sources in keeping it before the community and that the council will be more than willing to work with the city team in its solution.

In the same spirit we should offer our help and assistance to the council in solving any community problem with which they are primarily concerned. Working together in this way, the community will have the combined cooperative efforts of both council and manager, and good community leadership can be obtained.

In these days, when there seems to be so much confusion in government, it is essential that we recognize the fact that people generally are looking to the manager plan for the improvement of local government. The growth of the number of communities adopting the plan emphasizes this fact. We must be aware of the fact that this challenges every professional manager to do his part by contributing to sound leadership in his community.

From remarks in a Panel Discussion of the New York State Conference of Mayors and Other Municipal Officials, June 16, 1954.

William H. Johnson Also Speaks on Manager and Community Leadership

WILLIAM H. JOHNSON, Manager of Mamaroneck Village, N. Y., also spoke on the manager's role in community leadership at the Conference of Mayors at Monticello, N. Y. Mr. Johnson contributed the following valuable points to the discussion:

1. The manager should lead in the development of a training program among his staff to insure continuity of capable administrators in all departments should existing personnel leave.

2. The manager should plan on a long-range basis so that problems to be faced in the future will be met and solved in advance.

3. The manager should administrate the affairs and property of his community as if they were his own. Since, in a sense, he belongs to the people, he must follow a rigid code of ethics if he is to demonstrate fully his right to leadership.

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Mechanizing Makes the Difference

Traverse City, Mich., mechanizes its snow-removal crews and slices costs from 68 cents to 13 cents per cubic yard

By TONY EIKEY
Superintendent of Public Works
Traverse City, Mich.

Snow leaves Traverse City streets at the rate of 20 cubic yards per minute with the help of this Barber-Greene loader.

Snow removal is serious business in Traverse City. Because of its location on Grand Traverse Bay in Michigan's "lower peninsula," our city suffers severe winters when the snow piles up in high and picturesque drifts. While these snows may be beautiful to many of our 17,000 citizens, their appeal is lost to our Department of Public Works. Snow means hard work, carefully systematized to get the utmost performance from every dollar spent on removal.

Our budget figures indicate how well our systematic operation has paid off. Prior to 1950, our costs ran to 68 cents per cubic yard for snow removal; in recent years, our costs have averaged 13 cents per cubic yard.

The key to this municipal bargain is our three-year-old policy of mechanization plus a carefully prepared organizational procedure. These measures permit us to clear away heavy snows without any appreciable disturbance to the public's use of the streets.

During the winter months, we split our crew so that one man who is familiar with our snow-removal work will report at 2 a.m. His duty is to check the streets and determine the number of crews needed for snow plowing, snow removal, or ice control.

Our city ordinance prohibits parking on paved streets from 3 a.m. to 8 a.m. Therefore, our snow-fighting crews normally do not report before that time unless a serious storm develops. However, during a blizzard, they are prepared to work around the clock.

Downtown Area Cleared

Under more moderate weather conditions, with a maximum 6-inch snowfall, the graders first are dispatched to the downtown area and business district where they windrow the snow from the curb to the center of the street. We have two Austin-Western 99H four-wheel-drive and four-wheel-steer graders.

Next, the snow-removal crew reports normally at 5 a.m. A Barber-Greene loader goes to work on the windrow, loading the snow into four trucks with large 15-yard bodies. The trucks then dump the snow into the river that passes through the city. The same combination of graders and loaders removes ice from our gutters by using the identical procedure.

If only a few inches of snow falls, the business district is usually cleaned by 8 a.m. With a heavier fall, the work may take most of the day. We have often removed more than 3,300 cubic yards from this district in one day, and frequently as much as 3,600 cubic yards. After 8 a.m., unless a great emergency exists, there is not much use trying to fight traffic and clear snow. We have to clean the downtown area the night following the storm also, since snow from the sidewalks is shoveled into the gutter. We hire no trucks for snow removal; our fleet of four performs the work sufficiently well.

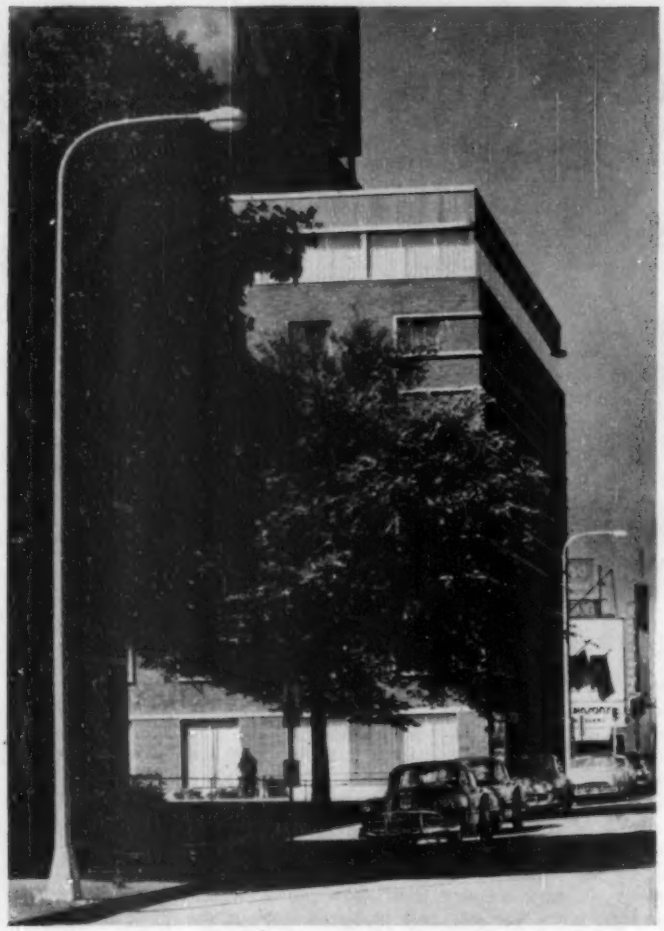
Heavy-duty trucks equipped with underbody blades and one-way Ross snow plows, when necessary, begin to plow the rest of our streets at the same time that the graders start working downtown. We use International K7 and General Motors trucks for this work.

The main thoroughfares, fire lanes, and streets to hospitals are cleared first. Trafficways in paved streets are widened from curb to curb, except in a continuous storm when the traveled part is kept open at all times.

After the storm is over, the streets are cleared and the same equipment is assigned to opening alleys. Graders open the downtown alleys after they have completed windrowing the snow in the streets. We remove the snow completely from approximately 2 miles of streets, and keep open over 70 miles of other streets and over 30 miles of alleys. Finally, our crew removes the snow from the front of all business places, churches, and schools.

For ice-control work we follow the same procedure in calling out our crews. The department has two 5-yard Good Roads Jet Jack sanders which are each operated by the driver of the truck. We keep sand stockpiled and treated with chloride for instant use. We mix either calcium chloride or rock salt according to the temperature and type of streets to be sanded. The department also operates two Willys Jeeps with plows and a small tractor to clear sidewalks in certain specified areas.

These units put the finishing touches on a good snow-removal program, but the backbone of the entire work is our Barber-Greene loader and our Austin-Western graders. The loader has given an especially good account of itself. We have operated it for three years at a commendably low maintenance cost. It has contributed substantially to our drop in operating costs from 68 cents to 13 cents per cubic yard.



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Garbage Disposer Sales

Progress of The "Ordinance Plan"

By C. D. BROWNELL, Jr.
Industrial Development Committee
National Association of Plumbing Contractors

ON May 9, 1953, an important resolution was read before the Convention of the National Association of Plumbing Contractors in Kansas City. To quote from the text of the resolution as it was approved by the convention:

> Proposed that the Board of Directors promote the increased use of food-waste disposers, through the free enterprise system, prevent government incursions upon the prerogatives of private business, and sponsor formation of a committee of contractors, manufacturers and other groups within the plumbing industry to mobilize a sound plan for preventing socialization of food waste disposers and promote their increased use through private business methods.

The background to this resolution is an interesting one. Progressive public officials confronted with the growing problem of garbage collection and disposal, had been looking at the sink-type, electric, food-waste disposer as the ultimate solution to their garbage problem.

Value of Disposer Recognized

Studies of the effect of ground garbage on the sewerage system and sewage-treatment plants were begun before World War II, and have been intensified since 1946. Consensus of the scientific field, after much observation, gave the electric disposer a high recommendation and thereby cleared the road for universal use of disposers in residential and commercial applications. A few public officials, in surveying an acute city garbage condition, decided that their communities should effect a mass purchase of disposers.

What generally happened is understandable. A mayor, city councilman, public works, or utility official suddenly realized garbage was becoming more and more of a nuisance. Where dumping was being practiced, due to the growth of suburban areas, communities had to reach farther out for satisfactory dumping sites.

Oftentimes, communities, expanding in the same direction, objected to the odors and other unsanitary aspects of garbage disposal. Garbage trucks, replacement parts, service and maintenance, labor and fuel were increasing in cost. Outbreaks of vesicular exanthema and trichinosis made feeding of raw garbage to hogs objectionable. Communities were becoming more conscious of the sanitary effects of garbage collection.

Universal installation of disposers as a solution to the problem was often considered. Unmindful of the obstacles involved, many sponsors proposed to effect a mass purchase of disposers for the community, completely bypassing all commercial channels of distribution.

In Jasper, Ind., the mayor and council arranged for one manufacturer to sell disposers to the townspeople at less than wholesale price. The same thing happened in Herrin, Ill., Mt. Dora, Fla., South Euclid, Ohio, and Shorewood Hills, Wis.

In every instance where the mass purchase program was undertaken, failure to accomplish universal installation resulted. Gradually, those involved have recognized that a disposer should not necessarily be compared with a water, gas, or electric meter. Rather, it is to be compared to a water closet or bath tub.

The indoor water closet replaced the outhouse, without upsetting the private enterprise system. The same can be said for the adoption of the kitchen sink and indoor plumbing system that succeeded the old-fashioned water pump and storage basin. The evolution of public health and sanitation followed a similar pattern. Each homeowner made his own choice of equipment.

"Ordinance Plan"

The past four years have witnessed a new approach to gain universal acceptance of disposers. Many examples already exist in the 48 states. The program can best be called the "Ordinance Plan."

Dearborn, Allen Park, and Royal Oak, in Michigan; Aurora, Colo.; St. Paul, Minn.; South Pasadena, Pomona, and Beverly Hills, Calif., all have ordinances on the books requiring food-waste disposers to be installed in all new construction where food waste is generated. Some of these cities have gone further by requiring disposers to be installed where major alterations take place.

Major cities such as Detroit and Cleveland are considering adopting similar ordinances. Each of these communities where the first step has been taken envisions a day in the near future when an ordinance will be passed requiring disposers in all existing construction.

Each homeowner has the right to choose whichever of the more than 35 disposers now on the market best fills his individual needs. Manufacturers will continue to develop new features in order to increase their share of the business. Normal competition within and between the channels of distribution permits the homeowner to buy the disposer he selects at a competitive price. Plumbing contractors and other retail dealers vie for the business by offering their sales and service abilities. Long-term financing is available under FHA, Title I.

Grinder Use Grows

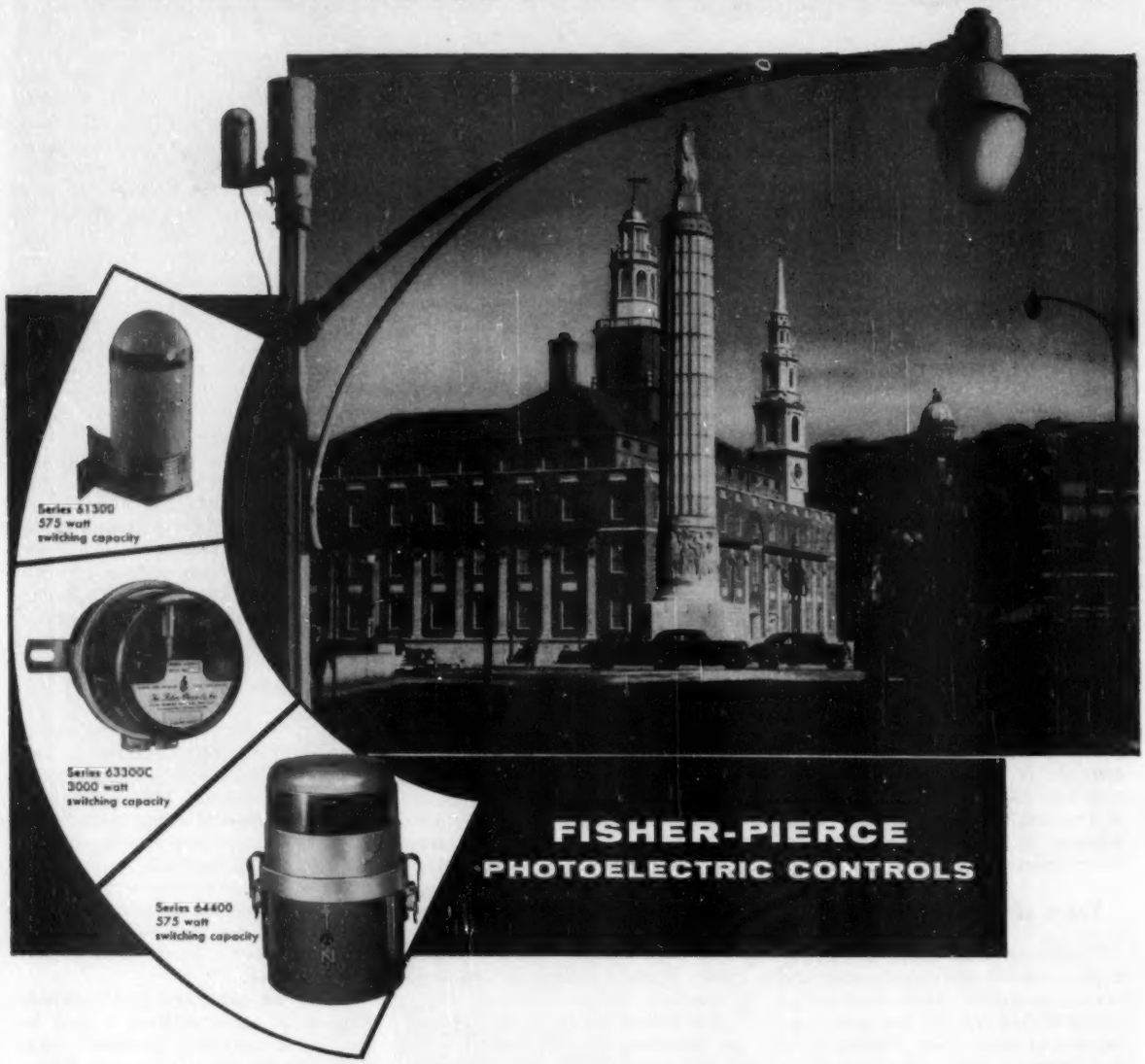
There are now more than 1,500,000 food-waste disposers in daily use. About 99% of the installations have been made through the private enterprise method of doing business.

By relying on the merchandising abilities of the distributors, it is anticipated that no further attempt will be made to bypass private industry. Competition has always, in our history, produced a better product for a lower price.

When an arbitrary and ruthless method of accomplishing a goal is chosen, tremendous conflicts take place between opposing groups. Plans for mass purchase under city sponsorship cannot fail to generate resistance from local dealers, plumbers, electricians, and other interested business groups, and to ride the political opponent to the incumbent regime. It is very possible that so much opposition will be aroused by arbitrary methods that the ultimate goal of the plan will not be accomplished.

In contrast, the "Ordinance Plan" strives for the team work so basically needed to accomplish a community-wide program. The National Association of Plumbing Contractors urges every public official in the United States, considering ways and means of effecting universal use of food-waste disposers, to look into the situation very carefully.

CONTROLLING STREET LIGHTS IN PROVIDENCE, R. I.

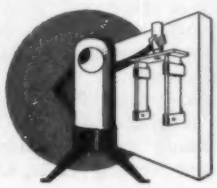


Motorists and pedestrians in Providence can thank their City Government for authorizing The Narragansett Electric Company to install dependable, automatically controlled street illumination.

The use of Fisher-Pierce street lighting controls assures dependable *automatic* illumination of streets the moment daylight drops below a safe value. Because F-P controls are photoelectric, they operate regardless of the hour, the season or the weather.

On the job in Providence since 1946, F-P controls now number about 3000. Narragansett engineers report favorable installation economics *and* an extremely low failure rate — only 2.29% of *all* units during a recent 12-month period.

Long, dependable service of F-P controls — in street lighting control systems in Providence and hundreds of *other* communities — is the basic reason Fisher-Pierce is recognized as a *leader* in its field.



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Port Allen, La.,

Adopts Controls for Rapid Growth

By WILLIAM B. SINGLETON
City and Industrial Planners,
Baton Rouge, La.

PORT ALLEN two years ago was called Louisiana's "Sleeping Beauty" because of its latent possibilities. But Port Allen is not asleep today. With the construction of wharves in this, the world's farthest inland seaport, big plans are in the air.

Qualified engineers estimate that port development alone may bring a population increase of 40,000 people (over 1,000%) within a 10-year period. Talk is rife of an even faster growth.

What will happen to this quiet, pleasant river town when sudden growth comes? When several million dollars of port construction are under way, what new demands will be made on municipal facilities? When one or two large industries move in and begin building plants at the same time that port construction is under way, will Port Allen be ready to take care of the health, housing, and nuisance problems that are bound to come? These are some of the questions which the Town Council and the Planning Commission are asking themselves.

Realizing that Louisiana statutes provide for municipal planning commissions to study such problems, the Port Allen Town Council reactivated its Planning Commission in 1951. Since land development and the construction of houses, stores, etc., are the immediate result of population growth, the Planning Commission decided that zoning, building codes, and subdivision regulations rated a top priority in plans for guiding the growth and development of Port Allen.

Zoning Ordinance Adopted

The zoning section of the planning program was adopted in April 1954 by the Town Council, on recommendation of the Planning Commission. It is the result of many months of work by the Commission; meetings with the Port Commission and civic groups; explanations to friends and neighbors; settling differences with fellow citizens; and then making final recommendations to the Council.

Before the recommendations were made, however, the firm of City and Industrial Planners, of Baton Rouge, was called in as consultants. A land-use survey was made in which every parcel of land in town was examined on the ground and its land use noted on the map. Studies were made to show the amount of land used for residential, commercial, and industrial purposes as compared to other communities. A future land-use map was drawn, and from this came the zoning ordinance and district map.

The proposed zoning ordinance is one of the most up-to-date and comprehensive in this part of the country. It includes off-street parking provisions for commercial and industrial buildings, based largely on recent findings of the National Highway Research Board (See table at right). New residential buildings will not be permitted in industrial zones and in accordance with usual zoning practice industrial buildings will not be permitted in residential zones.

One rather tricky problem was the zoning of the port area inside the town limits. Port studies showed a need for port development immediately south of the best in-town residential section. A veteran of World War II had just built his home on one of the southernmost lots, and the Port Commission was in process of acquiring land for heavy industrial uses right up to his back fence.

In consultation with the Port Commission a lease arrangement was worked out for reserving a 400-foot buffer strip between the heavy industrial port development and the existing residences. The land will soon be acquired by a public agency and then will be zoned only for recreational and agricultural uses. The 400-foot depth provides enough ground for baseball and other sports. Theodore E. Landry, Chairman of the Planning Commission and a landscape architect, says that long-range plans will probably call for a dense planting of trees to screen out the objectionable features of heavy industrial development.

The zoning ordinance also makes provision for the establishment of building lines on certain very important streets. This will require new buildings to set back a certain distance from the street where it is believed that widening will be necessary some five to ten years from now.

Partial List of Off-Street Parking Requirements of the Port Allen Zoning Ordinance

THEATRES, CHURCHES, and PLACES OF ASSEMBLY

One parking space for each five seats, where building is designed for seating 100 persons or more.

OFFICES

One parking space for each 500 square feet of floor space.

HOTELS

One parking space for each three guest sleeping rooms.

OTHER COMMERCIAL

One parking space for each 600 square feet of floor space.

INSTITUTIONS

Parking space as required by the Planning Commission.

MANUFACTURING

One parking space for each 5 workers based on peak employment, plus loading and unloading space.

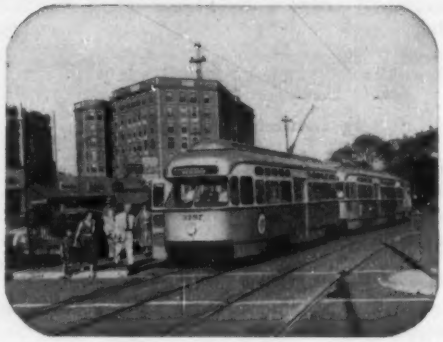
These parking-space requirements may be provided within 300 feet of the plot on which the commercial and industrial buildings are erected. Parking lots located in a residential zone must be screened by planting so they will harmonize with the surrounding development.

What steps are needed to make transit service faster, more convenient?

Until community leaders fully support certain measures allowing transit freedom of movement, transit vehicles will not be able to play a completely effective role in reducing traffic congestion and parking problems.

Parking, stopping and on-street loading and unloading of vehicles certainly should be eliminated wherever and whenever they reduce transit movement. Left-hand turns in congested areas and right-hand turns across the front of transit vehicles at stopping points, too, should be eliminated if transit movement is to be increased.

Should steps be taken to set aside certain lanes exclusively for transit, to provide a fast, open lane for the efficient movement of transit vehicles? In certain cases these steps *must* be taken if transit is to provide the margin of time and convenience to convert "preference drivers" into transit riders, sufficient to make real progress in the solution of the parking and traffic congestion problem. General Electric Company, Schenectady 5, N. Y. 107-18



IS YOUR CITY "GOING PLACES"?

In telling the public of the vital story transit plays in your city, plan to make use of General Electric's new 16-mm, 17-minute documentary film, "Going Places." To arrange for a showing, or to obtain prints for your own use locally, contact your G-E Apparatus Sales office.

Progress Is Our Most Important Product

GENERAL ELECTRIC

For Those Who Sell to Government

You can't hurry a municipal purchase, so gear your sales plan and your salesmen's calls to demonstrations and delays

By JEROME SHOENFELD
Washington Editor
Sales Management

EVEN THOUGH you have enough to do right now without taking on town councils or county boards, it may be sensible to look into such business. Sales come hard, but the market is big: more than $11,000,000,000 in 1952, exclusive of almost $7,000,000,000 construction. More important, it will grow. Government still will be buying when and if ordinary customers tighten up—perhaps with federal money should business priming be needed.

Local governments buy virtually everything: tooth paste, paper cups, appliances, fruit juice, meat, autos, and hay for horses.

A few quick generalizations:

1. ***Sales time,*** **from first approach to cashing the check, can vary from weeks to years. It's least on products that are common, simple, inexpensive.**
2. ***Number of contacts*** **required per sale varies, just as it does when you sell to families or to companies. But in government the number is usually greater: there may be scores who can spike your sale.**
3. ***Spotting the key man*** **is an art your salesman must develop. The one who signs the contract may have as much actual authority as a hen-pecked husband signing a real-estate deed.**
4. ***Requests for bids*** **are not assembled in advance by any single source. You learn by looking. Most buying, at least in form, is by sealed bid.**
5. ***Performance bonds*** **are demanded almost universally, especially where delivery schedules are important. Some governments want deposit bonds as you file your bid, but this practice is dying out. Whether either is required on your product will be stated in the invitation to bid. If there is no bidding, the purchasing officer will tell your salesman.**
6. **When you sell to a government, *you can't control the date*** **your offer must be accepted, say by offering a price inducement.**
7. ***Local manufacturers*** **are preferred.**
8. ***Gifts*** **and expensive entertainments scare off the people you are wooing. Sooner or later, these are investigated. The party out of power looks so searchingly for graft and corruption that government buyers may refuse even a "light."**
9. ***The red tape*** **you must follow is explained in manuals, published by most larger governments and by many smaller ones under titles such as "How to Sell to Blank County." If there's a purchasing officer, ask him for it; otherwise, write to the head man—governor, county manager, mayor.**

If yours is a common product that competes only in price, you sell it simply by underbidding. It's a matter, usually, of getting your name on the list of suppliers and then following the rules, whatever they are. Curiously, companies with dozens of products make the same mistake: they neglect to mention them all when they ask to be listed, perhaps because it's specialized salesmen or departmental sales managers, who apply. Put down everything—or almost everything—your company has.

Very likely, your product possesses some virtue which differentiates it from the common run. Listing isn't selling it. The great points at the start are finding leads and, when you've found them, spotting and interviewing the key buyers, plus those who possess some kind of veto power.

Whom do you talk to? That depends on what you're selling. Architects and engineers specify what's built in. Removables may be ordered either by the people who'll use them or by the purchasing officer. You must find out which and, in either case, talk to both.

Though the purchasing officer doesn't always decide, he has a lot to say. He must be cultivated, which requires knowing what he's like. Fifteen years ago, the title "purchasing officer" or "purchasing agent" referred to an order clerk, who checked requisitions to insure that signatures weren't misplaced, and counted carbons.

It's the elected officials who care most about keeping the business at home. When a buying agent crosses the border line in order to fetch a lower price, the affronted local company complains to an elected official. Buying agents detest such pressure.

From an article entitled, "Patience, Persistence, Foresight," appearing in *Sales Management* for May 20, 1954.

To the Editor of THE AMERICAN CITY:

The Ninth Annual Conference and Exhibit of NIGP will be held in New York City, on October 10-13, 1954, at Hotel Statler. Joseph V. Spagna, Commissioner of Purchase of the City of New York will be General Conference Chairman. John J. McHugh of the Amplex Corporation, New York City, is Chairman of the Exhibitors Committee.

C. L. MAGNUSON
President, NIGP
Hartford, Conn.

Various Specifications of The National Institute of Governmental Purchasing

One of the Institute's facilities is an extensive collection of specifications developed and supplied by public purchasing officers, such as specifications for:

Traffic signal equipment, by I. Y. Suggs, City Purchasing Agent, Orlando, Fla.

Firemen and policemen summer uniforms, by Mrs. R. S. McDonald, Purchasing Div., Meridian, Miss.

Trandem roller—compression-type collection body, by Joseph W. Nicholson, City Purchasing Agent, Milwaukee, Wis.

Storage batteries—broom refill material, by William Hunrick, Jr., Director of Finance, Berkeley, Calif.

From huge stadium to tiny horseshoe court . . . there's better play under CROUSE-HINDS Floodlights

Spectator's like them too!

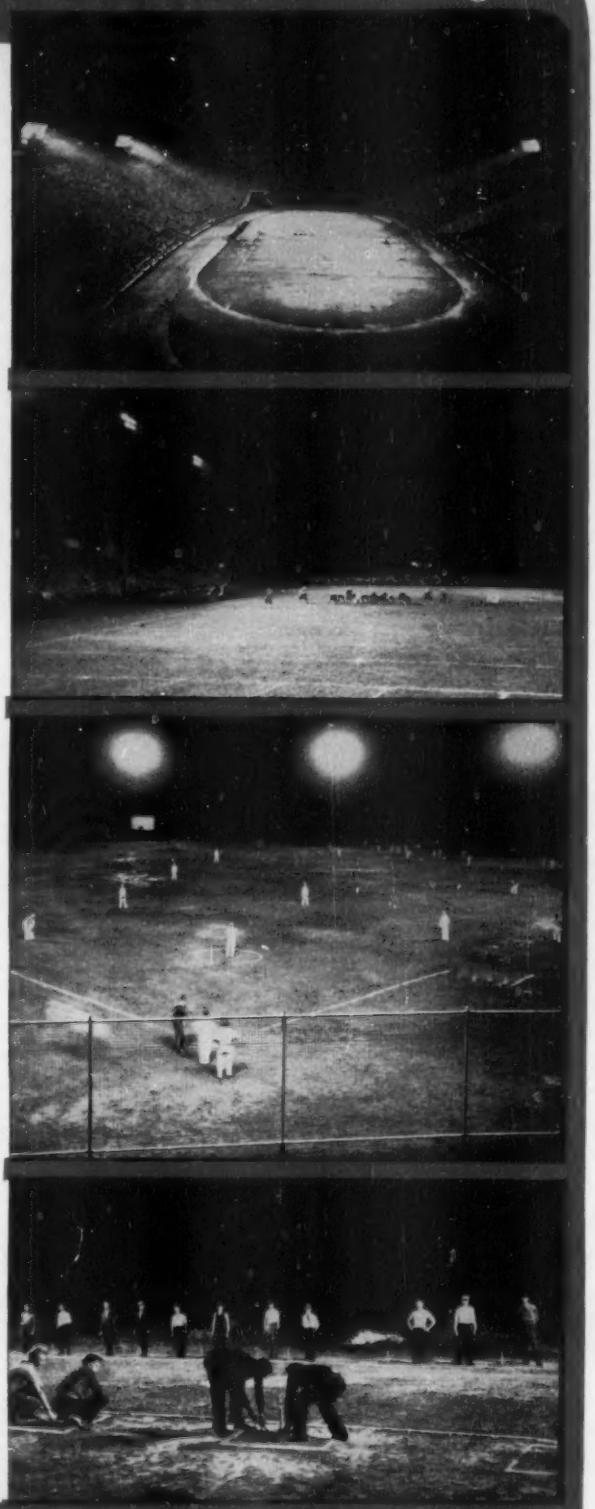
You'll have bigger attendance at a well lighted field.

A Crouse-Hinds floodlight installation is an assurance that you will have a well lighted field . . . where both players and spectators can follow the play at night as well as in broad daylight.

Crouse-Hinds Type FLA is tops in high efficiency lighting, scientifically designed to get the maximum amount of light on the playing field. It's designed for easy maintenance too. Relamping and cleaning are so easy that upkeep costs are at a minimum. Type FLA has a two-piece Alzak reflector . . . cast aluminum head and body . . . extra large opening for cleaning . . . hinged body . . . self-aligning stop . . . degree markings, and a sight for accurate aiming. Crouse-Hinds high standards of quality and skillful workmanship insure long life and dependable service.

For more than twenty-five years Crouse-Hinds Illumination Department has planned the efficient lighting of all kinds of playing fields, large and small. This wealth of experience is at your service. Their engineers will gladly recommend the proper selection and arrangement of floodlights for any application.

Send for the latest Sports Lighting Bulletin. It contains lighting layouts for dozens of different sports. It's FREE for the asking.



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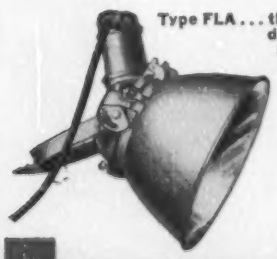

Type FLA . . . the modern floodlight designed especially for sportslighting by sportslighting experts.

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Outdoor Lighting

Some Facts About Street Lighting

In an average community, less than 15% of the street lighting is adequate. Only five cities in the entire country, it is said, are lighted throughout in accordance with the American Standard Practice of Street and Highway Lighting. These standards, which are available from I.E.S. or the American Standards Association, of New York, under the title of "American Standard Practice for Street and Highway Lighting," serve as a guide when a relighting program is under consideration.

Some of the basic principles that were considered in the formation of this standard practice should be known and understood by everyone who has an interest in making his community better and safer. Visibility is the key word.

We should be able to discern size, shape, and location of an object. If this object is lighted so its surface reflects more light than its background, we discern by surface detail.

Conversely, if the background reflects more light, then we discern by silhouette. It is the latter which offers the most practical goal for the street-lighting engineer, and he strives for a system that will produce uniform pavement brightness of sufficient intensity for comfortable seeing.

Light Sources

Filament: wide variety of lamp sizes, low cost, pleasing color quality, easy to procure and stock. Suitable for residential to primary business districts. In main business districts where high illumination is desirable, individual preferences and economics permit a choice between filament and . . .

Mercury-vapor: light output per watt is approximately double that of filament sources, long life reduces lamp renewals and maintenance costs, and color improved lamps answer many of the former objections to mercury. The three recommended sizes for street lighting are rated 11,000, 15,000 and 20,000 lumens. There is a third lamp, however, which is becoming more popular.

Fluorescent: with the advent of the street-lighting fluorescent lamp that will operate at low temperatures, this source may well be the answer to such problems as "spotty" illumination, glare, brightness, maintenance, and color. The very nature of this source means low brightness, high lumen output per watt, and long life.

Advantages of Fluorescents

The initial cost of a fluorescent installation is greater than that of an incandescent or mercury installation of equivalent foot-candles, but they provide materially greater visibility with the same foot-candles. On wet pavements the wide bands of reflected brightness are more effective in silhouette seeing. Since wet pavements at night are accident breeders, fluorescent lighting can do much to reduce traffic fatalities. Much work has been done on the design of fluorescent street-lamp luminaires and the ballast system as coordinated with lamp characteristics to assure reliable, consistently high performance.

Check records of traffic accidents and street crimes and take vehicular and pedestrian traffic counts for the evening hours on all streets.

Traffic is classified as: very light (under 150 vehicles per hour; light (150-500); medium (500-1,200), and heavy to heaviest (1,200 and up per hour). Pedestrian is classed as light, medium, and heavy. Retail business is classified as primary business area and secondary.

A table worked out by the American Standards Association gives minimum average horizontal foot-candles for adequate street lighting. A program includes a master map showing the order of the modernization program. The time schedule comes after design requirements are determined and equipment costs known.

At this point the type of luminaires, lamp sizes, spacings, and mounting heights are considered. There is much information available on the characteristics of various types of luminaires. From charts and diagrams it is possible to determine the light pattern obtained from a specific luminaire, and how it can be most effectively installed in order to obtain comfortable seeing (Space does not permit our describing this.)

Where the uitility does not provide a complete street-lighting service, the cities buy, install, and maintain the entire system, and purchase power from the utility. Others buy the equipment and contract with the utility for installation, maintenance, and operation.

Lighted Sports Field Pays For Athletic Injuries

THE STORY of the North Plainfield Field and Injury Fund, and the lighting of Canuck Sports Field covers a period of about 12 years.

The idea really originated with L. Coriell, an old-time umpire in this area who had seen many athletes injured. Benefit games were often played for those who received serious injuries, such as a broken leg or jaw, but those players who suffered spikings and broken fingers would have no help with medical bills.

Mr. Coriell felt that something should be done to assist all injured players, and it was decided that collections be taken at all games sponsored by the Recreation Commission. The idea caught on and grew, and collections were continued, being taken on open fields. One evening, when all open fields were occupied, the Board of Education gave permission to use their fenced-in field, and the collection taken at the gate was five times as large as before.

Next, permission was granted by the Board to fence in the open field, which it owned, but the stipulation was made that this could not be done until the necessary $3,000 was on hand. Much to the Board's surprise, this was done in about four months.

(*Continued on page* 137)

NORTH—Shakopee, Minnesota praised the performance of its Form 206 luminaires. The new lights provide superior illumination even in sub-zero weather.

EAST—Central Maine Power Co. accomplished their working objective of providing better street lighting economically by installing Form 206 fluorescent lights at Auburn, Maine.

NEW G-E FLUORESCENT STREET LIGHTS GAIN NATIONWIDE ACCEPTANCE

Are fluorescent street lights practical? Utility and municipal officials who have installed G-E Form 206 fluorescent luminaires are best qualified to give the answer. Their actual field experience, in all parts of the country, is summarized in the following questions and answers.

WHY USE FLUORESCENT STREET LIGHTING?

Fluorescent street lighting provides better visibility and a more even light distribution than the best engineered systems of either filament or mercury lamps. The low brightness of the light source reduces the glare and eye strain that accompanies other types of street lighting.

IS VISIBILITY IMPROVED?

Yes. Many lighting experts believe that fluorescent street lighting increases actual visibility by about one-third. Thus, a 1.25 footcandle level from a Form 206 fluorescent luminaire seems to provide the same visibility as a 1.7 footcandle level from filament or mercury luminaires.

IS THE COLOR OF THE LIGHT PLEASANT?

Yes. The whiter light furnished by the fluorescent lamps does not distort the familiar coloring of objects and people. Businessmen find that shoppers even come from outside usual trading areas to shop under the comfortable light from the fluorescent luminaires.

IS THE SIZE OF THE LUMINAIRE A PROBLEM?

No. The Form 206 luminaire is only slightly over six feet long and the distinctive size and shape add functional beauty to the appearance of any street or roadway. No guys or trusses are required to support the luminaire even in high winds.

WHAT MAINTENANCE IS REQUIRED?

Maintenance is reduced! The fluorescent lamps used in the Form 206 have an average lamp life of 7500 hours, or about two years of street-lighting operation. The hinged plastic globe is shatterproof and is tightly sealed to prevent dirt or insects entering the unit. Sun, rain, heat, cold, or aging do not adversely affect the plastic globe or the light output.

HOW DO COSTS COMPARE?

When over-all lighting costs are computed on an equivalent visibility basis, G-E Form 206 fluorescent luminaires cost less than any other comparable system of filament or color-improved mercury. Although equipment and amortization costs are somewhat higher, installation costs are comparable, and operating costs are generally lower.

GET MORE INFORMATION about this outstanding G-E fluorescent luminaire, the Form 206. Contact your nearest G-E Apparatus Sales Office, or write Section 452-139, General Electric Company, Schenectady 5, N. Y.

SOUTH—Statesville, North Carolina installed 104 Form 206 fluorescent street lights and was enthusiastic about their visual comfort, economy, and modern appearance.

WEST—Virtually glareless illumination and an even light pattern resulted when Seattle installed Form 206 luminaires to light the second level of this new Alaskan Way viaduct.

GENERAL ELECTRIC

Modern Spun-Crete Hy-Lite Standards on Boston's Forest Hills overpass.

Hy-Lites . . . THE MODERN APPROACH IN LIGHTING STANDARDS

MODERN in appearance! Modern in construction! Modern in performance! That's right, prestressed Spun-Crete Hy-Lites successfully combine these three important qualities.

Their attractive water-polished granite finish, and gracefully tapered Hy-Lite lines give any street or highway improved appearance.

Prestressing means increased strength for safer installation and longer service life. Because they're preshrunk, there's far less contraction and expansion under extreme temperature changes.

Handsome Hy-Lites never require painting —retain their "new look" year after year. Maintenance costs are reduced to practically nothing.

Write today for Catalog No. 300. It supplies the latest information and dimensional data on Spun-Crete Hy-Lite Standards. Address the American Concrete Corporation, 5092 North Kimberly Avenue, Chicago 30, Illinois.

American Concrete

PRESTRESSED CONCRETE LIGHTING STANDARDS

One of our local firms had a hot soft-ball team, and started to play on the enclosed field under portable lights. This was expensive, so again we went to the Board for permission to erect lights, and use the money from professional and local games to pay for them. The erection and installation of the lights was made possible by getting 84 citizens to sign notes for $100 each. With this collateral we obtained a bank loan.

The A. F. of L. Electrician's Union donated all the wiring work. A. H. Spinney, an engineer, donated plans, steel at cost price, erection, and welding work on the towers. Labor was donated from many other sources, with the result that we now have a lighting set-up that allows two soft-ball games, or one baseball or football game to be played on this field.

The 120 1,500-watt sports floodlights were manufactured by Crouse-Hinds, of Syracuse, N. Y. A mammoth scoreboard, suitable for football and baseball tallies was also donated.

We pay for injuries as funds are available. Along with other sports activities, our receipts have suffered in the last few years, probably due to television and the Korean conflict.

The entire field is owned by the Board of Education, and programs on the field are sponsored by the North Plainfield Recreation Commission. The field is operated at small cost to both by our Fund.

The program on the field for this year includes all high-school baseball and football games, both daytime and night games. The Recreation Commission program is as follows: Small Fry (8 to 12 years of age) Monday and Friday, with four games each night, two twilight and two under lights; softball on Tuesday and Thursday, operated the same way. This allows for one eight-team league each day.

On Wednesday and Saturday nights the N. J. Semi-pro Baseball Tournament plays under the lights. Saturday afternoon is given over to American Legion Baseball.

There is no activity on Sunday nights, but sometimes the field is in use Sunday afternoons. Inter-playground play takes place every morning and afternoon, Monday through Friday, with two games at the same time.

Canuck Field is a busy place, and it was all accomplished by a nucleus of about 15 citizens interested in the children of the borough.

Something New in Underpass Lighting

By H. G. Hrivnatz
Lighting Engineer
Houston Lighting & Power Company

UNDERPASS lighting has always been considered similar to tunnel lighting, but this is not true in the case of lighting installations for short tunnels or underpasses 300 feet to 800 feet in length.

The short structures present a greater traffic hazard than the longer ones because the speed of traffic carries the driver through the structure before his eyes have an opportunity to adapt to the varying values of illumination and because of the inherent glare factor which these structures present at the exit end. The driver is blinded by the brightness of road reflections or by sky light that can be seen through the exit end around a foreground of dark interior walls and ceiling.

The North Main Street underpass of Houston, Texas, which is about one mile from the center of the city, has been a traffic problem for many years. This 4-lane underpass is 490 feet long. The approaches as well as the interior walls and ceiling are painted white. Now that the new lighting has been completed the interior will be repainted white and the approaches will be painted a dark maroon color.

It takes 10 to 17 seconds to drive from the entrance to the exit of this short underpass when traveling at a rate of 20 to 30 miles per hour. In terms of illumination values, on a bright sunny day you may find 6,000 to 8,000 foot-candles on the white-washed approaches and a value of only one foot-candle, or less, in the center of the underpass. As the motorist proceeds, he encounters a quick increase in going from the center of the underpass to the exit where thousands of foot-candles are again encountered. This is conflicting to the eyes.

A number of years ago the lighting system was improved by the installation of 19 heavy-duty floodlights placed on the top portion of the right-hand wall of each traffic section. The floodlights were designed to use G-30, 250-watt projector lamps spaced somewhat closer at the entrance (approximately 10 feet on centers) and spreading out to a greater distance (approximately 30 feet) throughout the rest of the underpass.

Illumination Value

The average calculated value of illumination for this installation was one foot-candle. The floods were adjusted to project the light in the same direction as the flow of traffic and downward onto a dark road bed. All of this resulted in a dark passage way since no appreciable amount of light was projected or reflected onto the walls and ceiling areas.

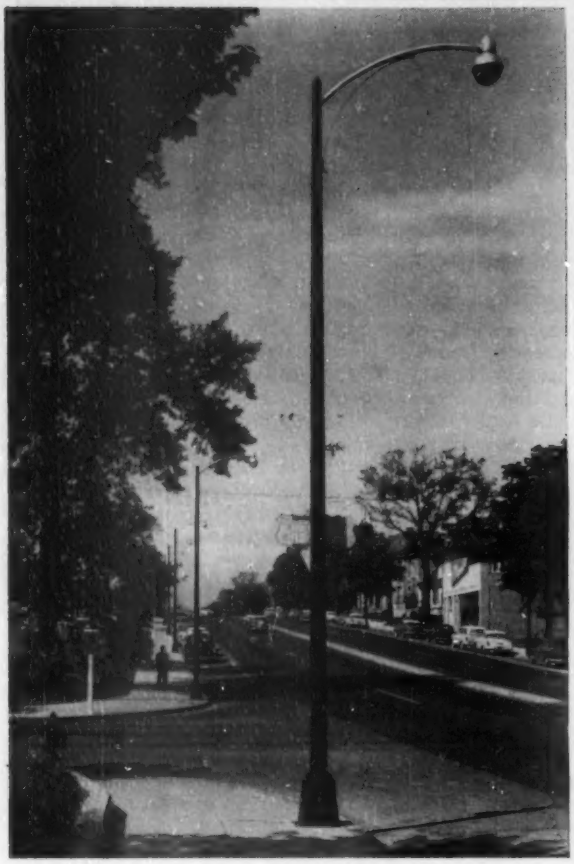
In later years the floods were readjusted to project light against the flow of traffic, thinking that a brightness pattern could be created against which drivers could see by silhouette. This scheme did not prove successful.

The floodlights were then turned to project light at right angles to the flow of traffic, which would illuminate the opposite wall directly instead of the road bed. The tunnel has been whitewashed and the resultant effect was much better than any of the other methods employed. This system of lighting was fine for nighttime operation when the driver's eyes were dark-adapted and he had the aid of good car headlamps. However, the problem of tunnel or underpass lighting is to create a safe daytime environment for all drivers.

Limiting factors affecting the type and location of the light fixtures are the low ceiling height of 14 feet in the underpass, and the ever-present dampness on walls and ceiling. This meant that the ultimate fixture to be used had to be small in physical dimensions, able to deliver an abundance of light, and had to be located in the corner of the underpass between ceiling and wall.

Consideration was given to various street-lighting luminaires. It was decided that the Westinghouse OV-20 luminaire with its 12-inch diameter and mounted with its axis parallel to that of the underpass, would fill the essential requirements.

Calculations, based on using the 20,000 lumen EH-1 mercury-vapor lamp, indicated that approximately



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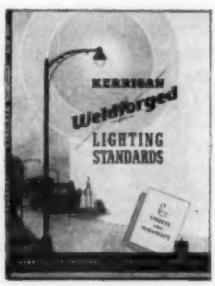

Kerrigan Iron Works, Inc.
Nashville, Tennessee

General Sales Office — 274 Madison Avenue, New York City

100 foot-candles would be obtained if units were staggered on about 4-foot centers at the entrance. The maximum distance of 30 feet that these luminaires could be spaced apart toward the exit end, and still maintain a fairly even level of illumination, was determined by a trial installation. A 30-foot spacing gives approximately 10 foot-candles of evenly distributed light.

Final design called for a total of 108 luminaires placed in the corners of each section, divided into four rows of lights beginning with 4-foot spacing, then 6-foot, 10-foot, 20-foot, with the last section having a spacing of 30 feet. Total cost of this system was approximately $33,000. All fixtures burn for daytime operation; whereas, only 36 burn for nighttime operation. The nighttime luminaires are on circuits which energize units that are staggered on 30 foot centers throughout both sections of the underpass.

Inspection of the lighting installations of other tunnels by the author, such as the Holland, the Lincoln, the Brooklyn-Battery, the Washburn, etc., did not give any outstanding impression of having solved the problem of eye adaptation for a driver going from thousands of foot-candles outside to the extremely low levels of 5 to 25 foot-candles that were found inside these tunnels.

It is believed that the method of lighting the North Main Underpass is practical and economical and should be given consideration in re-lighting other underpasses and tunnels.

Special Concrete Standards Carry Famed Boardwalk's 33-000-Lumen Lights

THERE are two major problems in the design of a new street-lighting system for a fine city street. The first is that the illumination be adequate to the character and use of the street. The second is that the daytime appearance of the lighting units be attractive and inconspicuous.

One of the nation's most challenging "streets" is the famed Atlantic City (N. J.) Boardwalk whose brilliant new lighting system was reported in THE AMERICAN CITY in July 1954. New standards, a new-size light source, and a new luminaire are among the features that were described. They commemorated the resort city's 100th birthday and the diamond jubilee of the American lighting industry.

The installation consists of 88 pretensioned standards made by American Concrete Corporation, of Chicago, Ill., which provide 30-foot light centers, and 35 which provide 24-foot light centers. The concrete used has a high concentration of black and white granite aggregates, and a strength of 7,500 pounds after nine days' curing. The poles are made by the "Spun-Crete" process—by revolving the molds, after they have been filled with concrete, at a speed of 400 rpm for 15 minutes.

This operation increased the density of the mix and reduces the water-cement ratio tc a minimum, for higher-strength concrete. Also, the Spun-Crete process produces a hollow core in the pole, which later becomes a cable raceway. The reinforcing, after being pre-tensioned, provides high resistance to tensional and torsional stresses.

A newly designed concrete bracket is attached to the top of the standard, with all metal parts protected against exposure. The noncorrosive construction of standard, bracket, and luminaire make for minimum maintenance cost and maximum resistance to salt air. A festoon outlet at 17-foot height provides for decorative lighting.

The frequent and varied decorative lighting requirements are handled by a two-conductor SE cable which supplies the festoon outlet in each standard. When decorative illumination is needed, this circuit is relay-actuated in the same manner as the street lights. A fuse is removed to de-energize the decorative lighting circuit at other times.

Attractive, durable, pre-tensioned American concrete standards, amply equipped to support luminaires and a variety of displays, are used throughout the installation.

Detail of the new concrete bracket used in the Boardwalk lighting project, with Westinghouse OV60 luminaire attached.

Think

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● **In any installation** that requires both sensitivity and lasting dependability . . . from traffic control systems to chick incubators to long range navigation . . . ADLAKE Mercury Relays can do the jobs that conventional relays do in an uncertain manner at best!

For instance, ADLAKE Relays have proved their ability to stand up under the most adverse conditions of temperature and moisture. Their time-delay characteristics are fixed and non-adjustable . . . normal line voltages and ambient temperatures from –38.8° to 200° have little effect on these characteristics. They require no maintenance whatever . . . are silent and chatterless . . . and their mercury-to-mercury contact prevents burning, pitting, and sticking.

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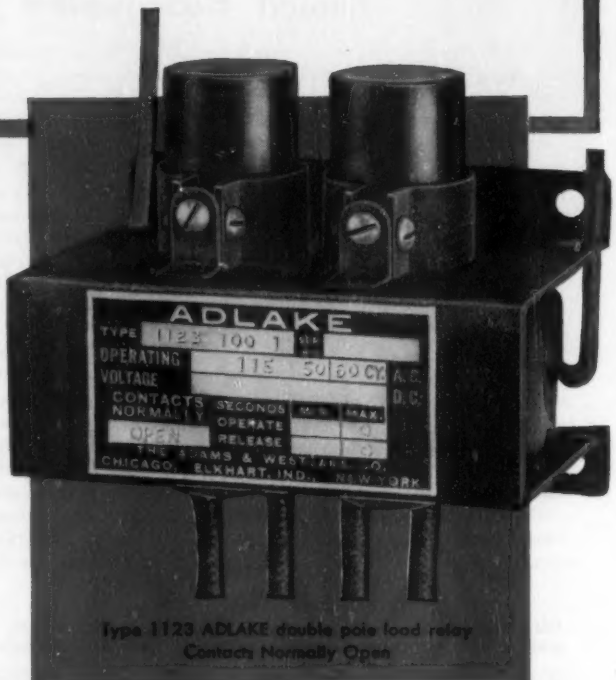

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By DAVID D. ROWLANDS
City Manager
Eau Claire, Wis.

Dedicated on November 16, 1953, the new 141-car parking ramp in Eau Claire's central business district was constructed with an eye to future city needs, for when necessary an additional two half levels can be added without taxing the foundation.

Eau Claire's Parking Ramp and Program

THE CITY OF EAU CLAIRE, WIS., has a 141-car parking ramp in the heart of the central business district. It was constructed in five staggered levels, reached by 4-foot-high ramps at either end of the structure, which is 158 feet in length by 125 feet in width. The foundation was constructed to provide for two additional half levels in the future if necessary (56 more cars).

Illumination

Five Benjamin standard open floodlights, which are demountable on a 20-foot pole, are providing illumination for the top levels. All other levels are lighted by Kirlin recessed ceiling lights in a concrete box which contain shock-proof lenses. Duncan Miller parking meters are mounted on the steel railings on all of the open floors, and on wall mountings on the lowest level.

Eighty-nine stalls in the ramp have a parking fee of 5 cents an hour, and the other 52 stalls have an hourly charge of 10 cents. In the latter stalls, it is possible to park your car for a total of five hours without returning to the meter. In the 5-cents-an-hour spaces, you can place coins in the meter to provide for 10 hours of continuous parking.

Early Experiences

For the first few months, parking-meter fees were in effect from 9 a.m. to 9 p.m., while a special charge of 50 cents a night was required for all-night parking privileges. The Police Department sold small chains at the hotels for 50 cents each, enabling a hotel guest to park his car in the ramp and lock the chain around the meter. These chains could also be purchased at the Police Department. The next morning the police officer unlocked the chain and removed it from the meter post. There were also no regulations governing parking in the ramp between 9 p.m. and 1 a.m. After several months of experience with these regulations, the City Council adopted a new ordinance providing for parking charges on the ramp from 9 a.m. to 12 midnight. The all-night parking fee has been eliminated since only a few cars parked in the ramp overnight.

In addition to the parking ramp, Eau Claire has four other off-street parking lots which, together with the new ramp, provide a total of 660 off-street metered parking spaces. Another 516 on-street metered spaces provide us with a grand total of 1,176 available metered spaces.

Financing the Program

Parking revenue bonds, in the amount of $230,000, were sold by the City Council last November at an interest rate of 3.09% for the purpose of financing the parking-lot program. Officials who made this program work are the members of our City Council: Nate Sindelar, Finance Director; Francis D. Kuckuck, Director of Public Works and Utilities; and Bernard L. Garmire, Police Chief.

Did YOU put a nickel in this morning?

Probably not! But if you did have to use parking meters every day...

. . . you'd *appreciate* the smooth DUAL "drop-start" operation the taxpayers like so well. Give 'em a meter that works . . . *easily!* Give 'em DUAL's precision timer movement that doesn't cheat or disappoint them, or *you* . . . and goes on, accurately, for years and years!

Write today for information on SINGLE or DUBL-DUAL Parking Meters for on-street or off-street service—the modern meters with "drop-start" automatic action and selective gearshift time adjustment.

Helpful, detailed bulletins are available. Write *The Dual Parking Meter Company* (subsidiary of The Union Metal Manufacturing Co.), *Canton 2, Ohio.*

DUAL the Original...

the Friendly **PARKING METER**

How just $937.50 can help you handle more traffic—safely!

OLD-FASHIONED, inefficient, non-reflectorized signs like this perform their function properly only by day.

HERE'S A REPEAT of a special offer you shouldn't pass up—an answer to the problem of controlling expanding traffic volume with limited operating budgets.

611 AGENCIES from coast to coast have adopted this sign production system. Many other government agencies have asked that we repeat this offer, so here it is... your opportunity to equip a sign shop with a heat-lamp vacuum applicator for making and reclaiming reflectorized signs at a low investment.

NEW KIT PURCHASE SAVES YOU $562.50!

Everything you need for a modern sign shop! This kit includes a new, modern 36" fully-automatic vacuum applicator and complete supplies of "Scotchlite" Reflective Sheeting and sign blanks. Buy it to begin the conversion of your system to signs that are visible at night in true shape and color . . . or as a starter kit for refinishing or reclaiming old signs. Everything you need for top-quality reflectorization of signs and delineators is included. Use the coupon for complete information!

SIGNS OF "SCOTCHLITE" SHEETING protect motorists day and night—as well as your safety record . . . can be made professionally in your own shop with a vacuum applicator!

LOOK what you get!

- New "Scotchlite" 36" Heat Lamp Vacuum Applicator.
- 24" x 10 yd. roll of Wide Angle "Flat-Top" Silver "Scotchlite" Sheeting.
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- 24" x 10 yd. roll of Wide Angle "C" White "Scotchlite" Sheeting.
- 30 Unmounted stop signs, faces of red, yellow, or California Standard "Scotchlite" Sheeting.
- Forty .081 Aluminum blanks 24" x 24" (25 octagonal, 15 diamond).
- 6 Sets "Stop Ahead" "Scotchlite" Film cut-out letters.
- 6 Left curve symbols "Scotchcal" Film.
- 6 Right curve symbols "Scotchcal" Film.
- 6 "Narrow Bridge" cut-out letters, "Scotchcal" Film.
- 25 Sets border stripes "Scotchcal" Film (4 per set).
- 3 Templates (1 Narrow Bridge, 1 Stop Ahead, 1 Right & Left curve symbol).

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I would like information on your sign shop kit, together with diagram of model shop and information on making reflectorized signs. I understand there is no cost or obligation.

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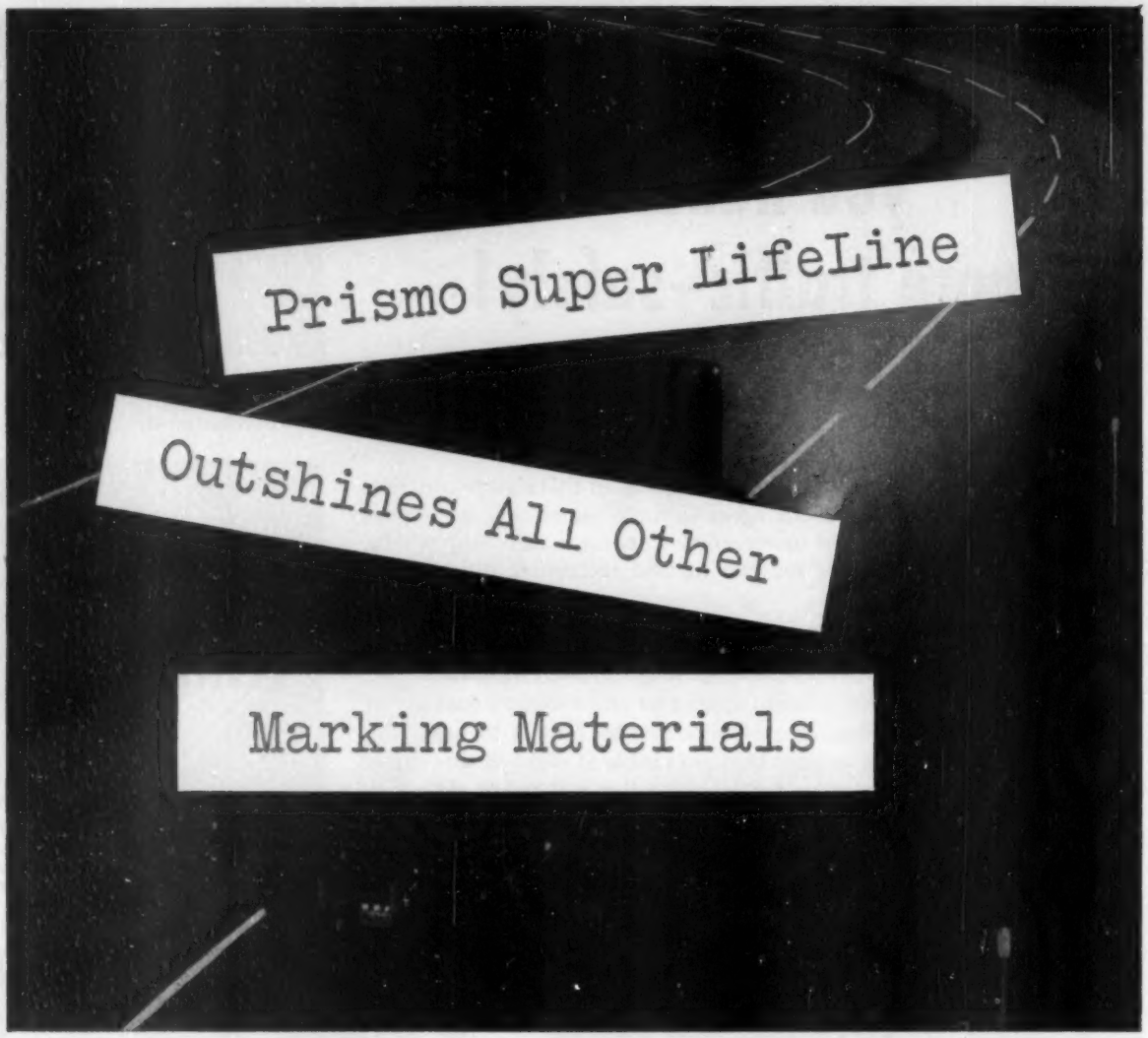
Address.....

City.....Zone...State.....



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Immediately reflective . . . longer life . . . greater economy . . . simpler application.

The <u>one</u> marking material to give you all-hour, all-weather visibility—for years!

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Planners: Think Rail Transit in Big Cities

To the Editor of THE AMERICAN CITY:

The April 1954 article on "Rochester's Traffic Strainer" was basically very good, and most interesting, but evidenced some lack of understanding of the mass transportation requirements, if the city is to have a healthy core.

Rochester, with its 350,000 people, has a potential of 175,000 daily transit riders with surface transit, or 200,000 with rapid transit of some type better than the orphan trolley that now operates. This means that during a peak hour, 20,000 persons must be carried on transit vehicles into or out of the city center.

With high speed, high quality service, fully integrated, a single route of the type proposed in the article would carry 5,000 persons per hour on the radial arterials in one direction. That is beyond the economical capacity of either motor bus or trolley coach to handle expeditiously. It can be done, but at a sacrifice of economy and speed, both essential to competitive mass transport.

May I take this opportunity to suggest that planners give more thought to rail rapid transit. Since it is necessary for the rubber-tired vehicle to operate on local streets to gather and distribute its load, the expressway is of no value if downtown streets are congested as they always will be, especially when expressways entice more cars downtown. With 5,000 transit riders on an arterial per hour, it means 83 per minute, or a bus every 48 seconds. With traffic lights, passenger stops, and automobiles in the way in the core area, it is impossible to operate quality bus service.

With rail cars, more people can be seated per vehicle, thus increasing productivity in an industry where labor costs take 60% of the total. Two cars (or more) can run in coupled pairs, increasing the interval between units to two minutes at 5,000 passengers per hour. This increased interval will permit much higher speeds, offering still greater economy and public appeal. The ride is better, too. If volume increases, there is reserve capacity to carry it.

E. L. TENNYSON
Traction Commissioner
Youngstown, Ohio

Take Rapid Transit to Boston

AN 800-car lot, opened June 19, 1954 at the Wonderland Station of the Metropolitan Transit Authority, will save automobile commuters 20 minutes to the heart of Boston, Mass.

Rapid-transit trains run from Wonderland to downtown Boston in 17 minutes, said to be less than half the time it takes to drive there in traffic. The lot is restricted to MTA patrons who buy a combination ticket that allows all-day parking and a round trip by transit for 61 cents.

The lot, on a main highway, is easily reached from many communities north of Boston. It is located just beyond the heavy-traffic area and will be advertised.

The only way to reduce the number of cars in a business district is to provide logical facilities for parking as many cars as possible before they reach the business district. These lots for long-time parkers can be located at public transit stations and along the loop that should encircle a business district.

Results are what count!

RESULTS! That's what you want from striping machines... and Wald Reflecto-Liners are the machines that **give** you superior results—everytime. All Wald machines are engineered to be the **best** on the market. For example, here are some Wald features that are not available on competitive equipment: Reflecto-Liner frames are constructed of L-beam steel... absolutely no buckling... saves time of the crew and downtime on the machine. And take the air-to-gun ratio. **Only** with Reflecto-Liners do you get an **ample** ratio that means smooth, even striping results at all times—even if air leaks develop.

REFLECTO-LINER MODEL 8T

A highly versatile, single-line machine for town or industry, the Model 8T is inexpensive, lightweight and highly maneuverable. Lays plain or reflective markings in uniform, clean-cut lines 2" to 6" in width. Marks within one inch of curbs. It will also provide a portable source of air for spray painting.

These are but a few reasons why Wald Reflecto-Liners are your best buy in the striping-machine field.

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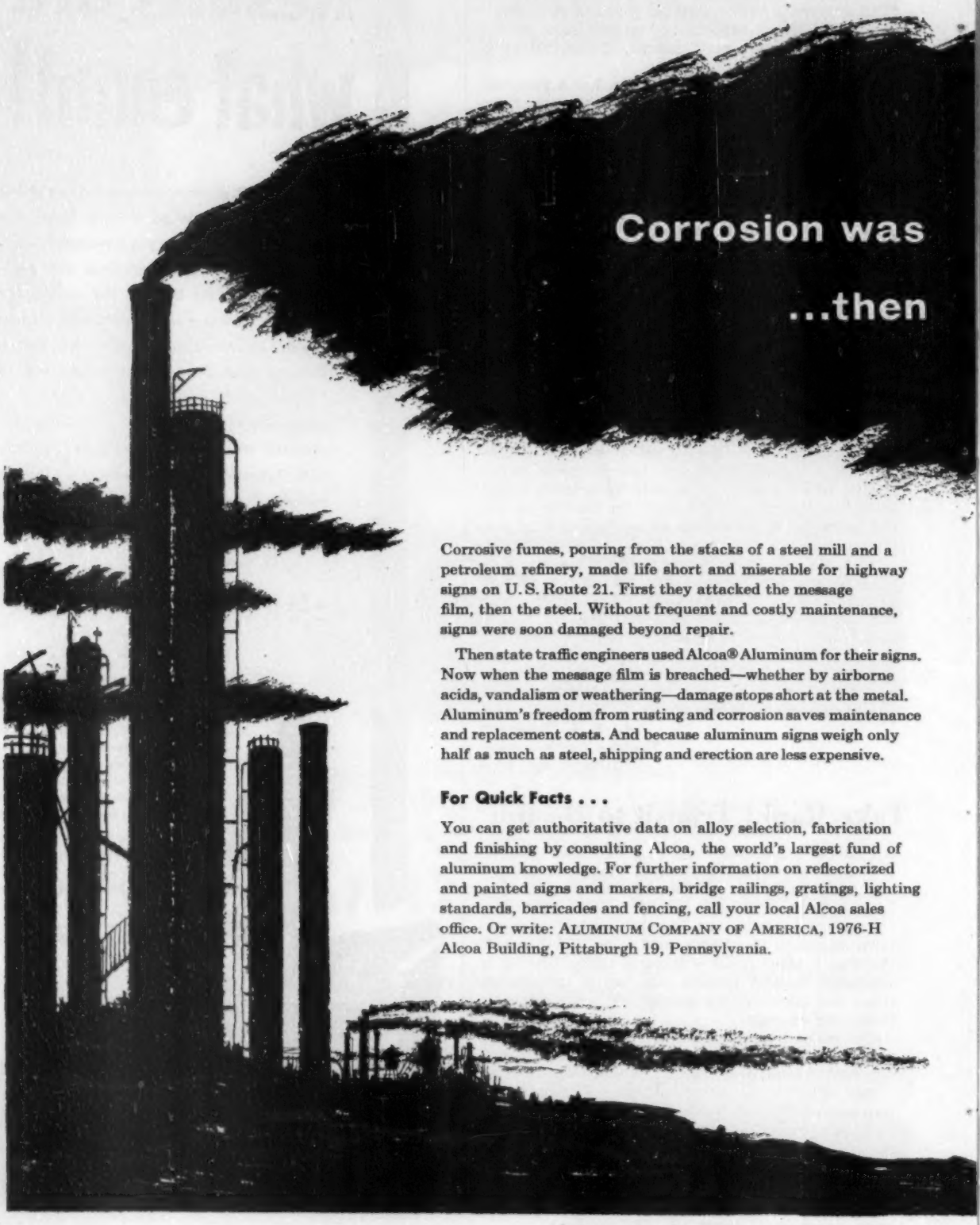

Corrosive fumes, pouring from the stacks of a steel mill and a petroleum refinery, made life short and miserable for highway signs on U. S. Route 21. First they attacked the message film, then the steel. Without frequent and costly maintenance, signs were soon damaged beyond repair.

Then state traffic engineers used Alcoa® Aluminum for their signs. Now when the message film is breached—whether by airborne acids, vandalism or weathering—damage stops short at the metal. Aluminum's freedom from rusting and corrosion saves maintenance and replacement costs. And because aluminum signs weigh only half as much as steel, shipping and erection are less expensive.

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You can get authoritative data on alloy selection, fabrication and finishing by consulting Alcoa, the world's largest fund of aluminum knowledge. For further information on reflectorized and painted signs and markers, bridge railings, gratings, lighting standards, barricades and fencing, call your local Alcoa sales office. Or write: ALUMINUM COMPANY OF AMERICA, 1976-H Alcoa Building, Pittsburgh 19, Pennsylvania.

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CITY OF PASADENA
Pasadena, Texas

"... with the service we have had from the AUTOMATON, when the time arrives, we will increase our supply with this particular meter."

M. F. Jackson

Dep't. of Public Safety
Orange, New Jersey

"We now have under construction a municipal parking area and intend to install MILLER meters there also. We have found the MILLER dependable, efficient and causing a minimum of complaints as to operation."

Russell A. Ruby

CITY OF PITTSBURG, KANSAS
Office of Wm. E. Hansen
(City Manager)

"... requested by merchants to install more parking meters. Inasmuch as MILLER meters have rendered satisfactory service and low maintenance costs, we will duplicate the type we now have."

William E. Hansen

Typical of the endorsements

over 1,200 cities gave these famous parking meters

CITY OF COLUMBIA
Columbia, Tennessee

"... would like to recommend to you the MILLER, the type of meter that Columbia installed six years ago. We are more than pleased from both a service and maintenance standpoint."

Carl D. Eskew

DEP'T. OF POLICE
Carlsbad, New Mexico

"Another thing very important is the sand and wind we sometimes have, but these MILLER meters are very tight and we have not yet had a clock stopped by the sand."

L. F. McCollum

DUNCAN MILLER MANUAL
DUNCAN AUTOMATON AUTOMATIC

CITY OF WAUSAU
WAUSAU, WISCONSIN

"We consider the AUTOMATON the only fully automatic meter on the market. Performance is good, breakdown nil and no winding expense."

Herbert A. Geise

Write TODAY for our interesting brochure complete with suggestions for engineering, designing and financing off-street parking facilities. It's yours for the asking.

DUNCAN PARKING METER CORP.
835 N. WOOD ST. CHICAGO 22, ILL.
Factory at Harrison, Arkansas
Manufacturers of the DUNCAN-AUTOMATON fully automatic and the DUNCAN-MILLER manual parking meters.

Radar Detectors Umpire Traffic Intersections

TRAFFIC-SIGNALS that are actuated by the vehicles passing over a mechanical or electrical detector in the street, can now be operated by radar detection. A beam of microwaves from an overhead "eye" is directed down each of the interesting streets.

Vehicles enter the zone of the beam at the proper distance from the intersection, normally 100 to 400 feet. As each moving vehicle comes to the detection area the microwaves impinge on it, a portion of the energy being reflected back and picked up by the small overhead antennae.

This system of radar detection is sensitive to vehicle motion at all speeds, so that there is supplied to the controller a record of the pattern of approaching traffic. Each vehicle registers its approach but once. Drivers and pedestrian traffic are completely unaware of the operation.

"Traffic-Actuated Control"

Just how does radar work in traffic-signal control? First let's take a look at the signal control equipment with which it has been integrated. It was the Automatic Signal Corporation (now The Automatic Signal Division of Eastern Industries, Inc.) that 25 years ago introduced a new term to the vocabulary of traffic engineers—"traffic-actuated control."

With the familiar "fixed-time control" if the setting is 30 seconds of green on Main Street and 20 seconds of green on State Street, this schedule is adhered to regardless of changing traffic on the two streets. Often the signal holds up a string of moving cars on one street and shifts to the other on which not a car was present.

Automatic Signal's Electro-Matic system added eyes and brains to traffic signals and operated them on the demand principle. Approaching vehicles signalled their approach, their number and spacing, so that the actuated controller could respond and apportion the green light in accordance with the ever-changing traffic pattern at the intersection. Thus the right-of-way was allocated on the basis of actual demand and the inefficiency and loss of time caused by the shifting of the green light to an empty street, while impatient motorists waited, were eliminated.

Traffic-actuation was first introduced in 1928 in New Haven, Conn. It is now a standard means of handling difficult traffic-control problems. Equipment has been developed for controlling all conceivable types of intersections on city streets and trunk highways, much of it highly specialized and all of it designed to move maximum traffic volumes with the least delay and highest possible safety.

Detectors

Traffic-actuated signal systems must "see" the actual traffic conditions at the intersection and, therefore, it is essential that they be provided with some means of receiving information about oncoming vehicles. This information can be obtained by pressure-sensitive detectors and magnetic detectors. They are surface and subsurface structures which necessitate pavement excavations for their installation, and their effective range is limited to the immediate vicinity of the detectors.

By incorporating the magic eye of radar into the Electro-Matic traffic-control system all components of the system have been brought above the ground, at a considerable saving in installation cost. At the same time, the effective range of operations has been extended to cover an entire area of the street.

Operation

Here's how it works through an operating cycle at an intersection. The green light is on A Street, with the intersection temporarily free of traffic. A car now approaches on A Street, and at a point about 200 feet from the stop line it enters the radar beam directed toward the traffic lane in which the vehicle is moving. The microwaves of the radar beam impinge on the surface of the car and some of the energy is reflected back from the moving car and is picked up by the overhead "eye" which emitted it.

The approach of the car is transmitted immediately to the Electro-Matic controller, on a pole at the intersection. The moving car is then assured of the necessary green protection time for it to clear through the intersection. Succeeding cars arriving singly or in groups from either direction on A Street are individually recognized, recorded in the electronic brain, and processed for safe passage time.

Meanwhile B Street has not been idle. It too is equipped with radar eyes guarding both of its approaches. Shortly after the first few cars have arrived on A Street, a car moves toward the intersection on B Street, enters the radar field, which sends in its arrival signal to the master controller.

However, since A Street is in use by cars arriving at close intervals, the electronic brain records the presence of the B Street vehicle but does not shift the green light from A Street to B Street.

The first arrival on B Street is followed by others on both approaches, each detected about 200 feet from the stop line and registered in the controller. The Electro-Matic brain is alert to the needs of B Street traffic for promptest possible right of way, but it is still receiving A Street radar signals from closely spaced cars and it therefore temporarily withholds the green light from B Street.

As soon as the electronic brain receives indication of a suitable gap in A Street traffic it at once transfers right of way to B Street. There is then repeated the process of receiving radar signals and safeguarding traffic moving on B Street through the intersection while watching for an opportunity to shift the green light to approaching traffic that has in the meantime sent in radar signals from A Street. When right of way returns to A Street, the control cycle has been completed. This is volume-density control.

Searching for Gaps

This process of searching for gaps in traffic is carried out by electronic circuits which balance relative demands with mathematical accuracy. The length of the gap that will assure continuance of the green light is not of fixed length, but is electronically varied by conditions on both streets.

If only a few cars are approaching on B Street while A Street has the green light, the control will tolerate a longer interval between radar signals before it will shift the light. However, if B Street demand builds up rapidly, the control is much more severe in its requirements for con-

POST TOP MOUNTING with this cast aluminum bracket is one of the many mountings available for G-E adjustable signals.

NEW ALUMINUM REFLECTOR combined with a fixed-focus socket provides outstanding optical performance. Socket permits proper positioning of lamp filament during maintenance or relamping. New color-coded leads and terminal board simplify installation.

New G-E Traffic Signal with Aluminum Reflector Meets I.T.E. Specs. and Reduces Breakage

General Electric's new adjustable traffic signals use an entirely new aluminum reflector which not only meets I.T.E. performance specifications, but by its unique design also reduces dangerous false signal indications by the sun's rays. The reflector will withstand rough handling and virtually eliminate reflector breakage.

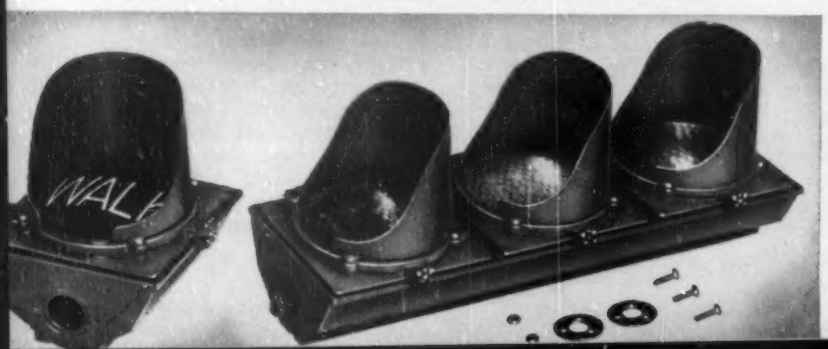
SUPERIOR OPTICAL PERFORMANCE is achieved with this reflector and its unique fixed-focus socket. The socket maintains a fixed distance between the lamp filament and the reflector, yet allows proper orientation of the lamp filament when relamping. Simply screw in the lamp; pull lamp and socket forward slightly and rotate as a unit until the open side of the horseshoe-shaped lamp filament is up; then release. No tools are required.

OTHER FEATURES—Unit construction of strong, non-corrodible, light-weight aluminum alloy makes G-E adjustable traffic signals extremely adaptable to different mounting or color arrangements to meet changing traffic requirements. Installation is simplified by color-coded leads and an accessible terminal board.

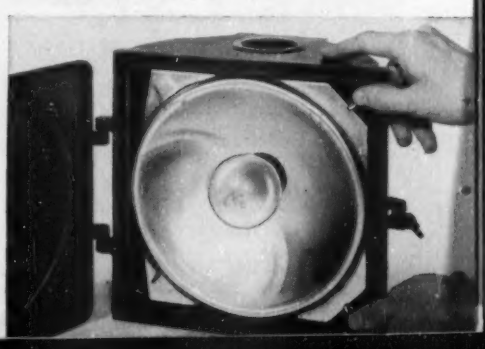
COMPLETE INFORMATION on these new signals is found in Bulletin GEC-698, available from your G-E Traffic Control Distributor, or G-E Apparatus Sales Office, or by writing Section 453-62, General Electric Co., Schenectady 5, N.Y.

GENERAL ELECTRIC

UNIT CONSTRUCTION of signals eliminates need for end plates and tie rods; makes it easier to add or subtract sections. Individual signal sections of the same signal can be separately oriented horizontally for maximum visibility in varying traffic conditions.



SPRING CLAMPS at the side of the hinged reflector may be released to swing it forward for easy access to wiring.



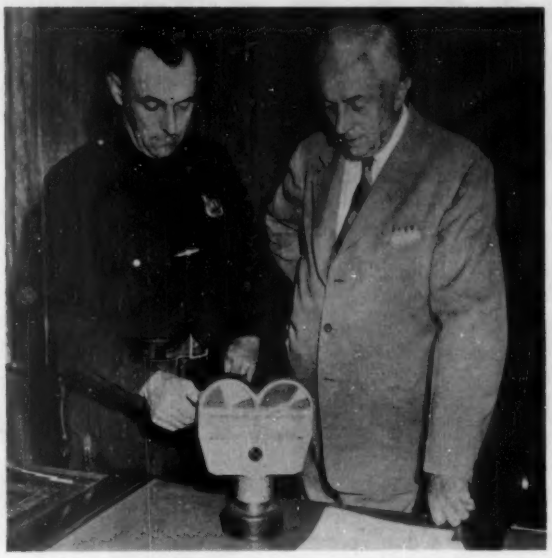
tinuance of right of way on designated A Street.

Not only are relative traffic volumes constantly compared, but the Volume Density controller also watches closely the time that it has kept the red light on either street. For example, even a single car waiting against the red light will make it progressively more difficult for the green street to hold the green light.

Entirely aside from the mounting traffic demand on the red street, the Electro-Matic controller records the spacing of the radar signals from traffic moving on the green street. Any tendency toward straggling on that street is noted at once and a prompt shift of right of way is made if over-all conditions warrant. Where bumper-to-bumper conditions develop, an over-all circuit shifts the right of way at the end of a predetermined maximum time.

It is expected that the radar control device will find extensive application in getting 60,000,000 vehicles through the overcrowded intersections of city streets and the nation's highways.

Ten Dollars Per Metered Space Pays for Collecting, Repairing, and Policing



Patrolman Henry Schaefer, meter mechanic and collector, and Mayor Fred A. Greis, and one of the twins of Lynbrook N. Y., at the Mayor's desk in remodeled Village Hall.

By FRED A. GREIS
Mayor
Lynbrook, N. Y.

THE people and officials of the Village of Lynbrook, N. Y., are delighted with the results of the parking meters installed in October 1950. The satisfaction embraces the original purchase, the elimination of long-time and double parking, and the operating cost.

The meters were purchased on the usual trial basis, half the receipts going to the manufacturer. When half the purchase price had been paid, the manufacturer offered a 5% discount for the balance due. The village accepted.

Quite a number of the merchants live outside the village and used to park all day in the crowded business district. Consequent lack of curb-parking space caused considerable double parking. Both of these practices ceased when meters were installed. There are 232 Mark-Time Twin meters, which permit the use of half the usual number of posts, and 56 single meters.

One Policeman Handles the Meters

Patrolman Henry Schaeffer collects weekly, and two bank deposits are made by Village Clerk Harold Dana. The Twin meter has a common coin box which halves the handling of collections at these meters. All the coin boxes are secured by lead seals made by E. J. Brooks Company of Newark, New Jersey.

At Village Hall the seals are broken and the coins are sorted and counted by a Standard Johnson machine. A bank had wanted $250 per month to do the tabulating and counting.

Twice a year, in the Spring and the Fall, the policeman inspects the entire installation, taking apart and cleaning every meter.

Since the meters were installed, annual factory costs for parts have been as follows:

$117.41 in 1951
543.67 in 1952
467.00 in 1953

The policeman devotes roughly a third of his time to collecting, a third to servicing, and a third (two days each week there is neither collecting nor repairing) to policing.

Policing involves handing out about 1,000 violation tickets a year. This is one of the values of having a policeman handle the meters—he has the power to issue summonses. All the work of these three functions—collecting, repairing, policing—cost $467 for parts and $4,800 salary; total $5,267 for 288 meters including 232 twins, or about $10 per parking space per year.

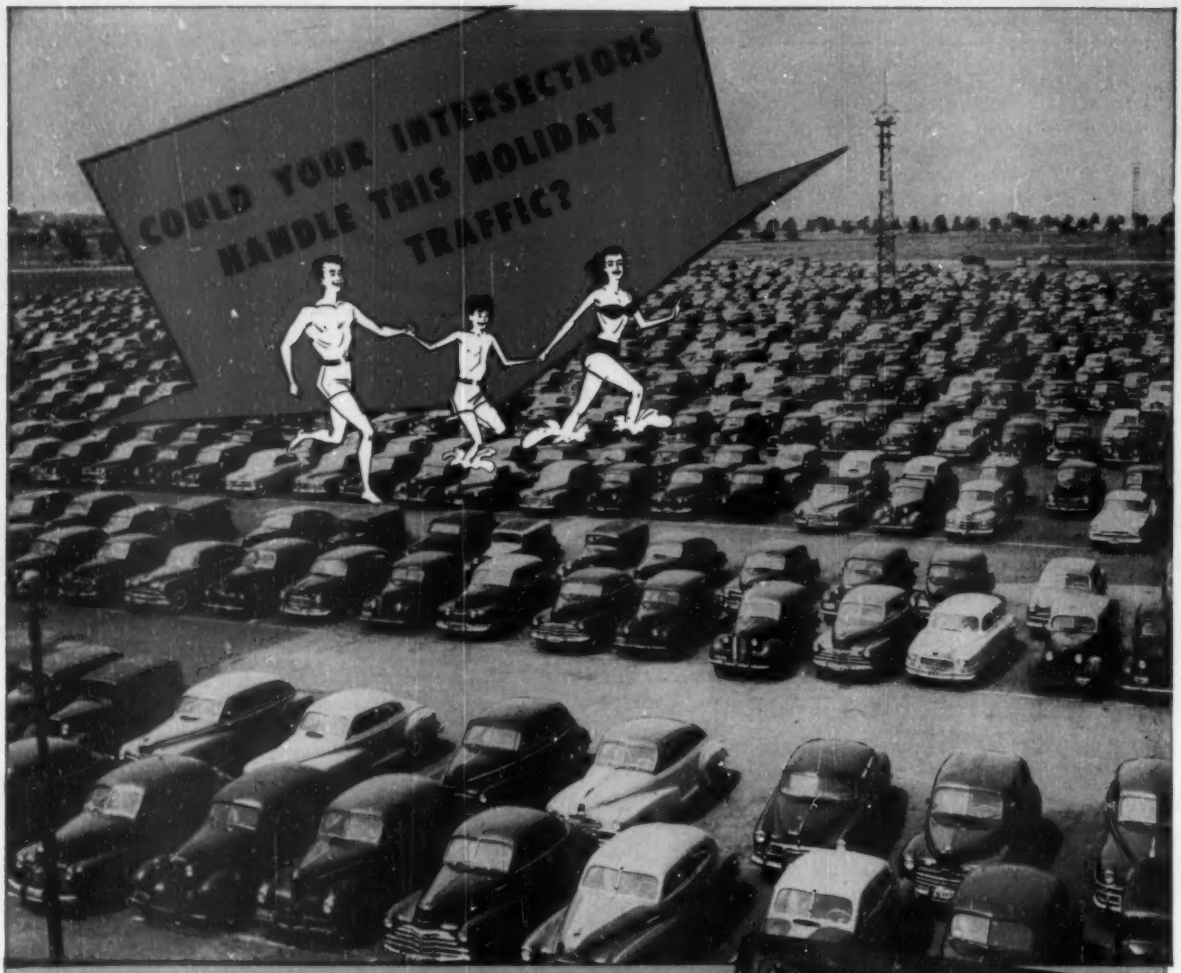
Four Motorcycles—No Traffic Fatalities

THE City of New Castle, Pa., is very pleased to report that since the purchase of four Harley-Davidson motorcycles with side cars and 2-way radios, the efficiency of traffic control and of the Police Department itself has increased at least 50%.

Since the use of the motorcycles, the Police Department reports fewer accidents and traffic violations.

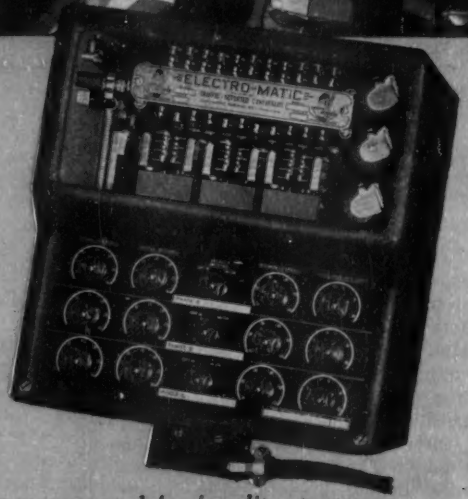
In 1952 this city had six pedestrian fatalities due to lack of traffic enforcement and safety education. Now New Castle is the only city of comparable size that is able to make the following statement: "The City of New Castle had a perfect accident fatality record in 1953."

EDWARD A. DECARBO
Mayor
New Castle, Pa.



WHO CAN PREDICT when these fair weather fans will break loose and flood your highways? When these homeward bound hoards deluge your intersections, traffic signal controls must respond and adjust immediately to prevent traffic jams. Heavily burdened highways deserve, and must get more of a share of the green light.

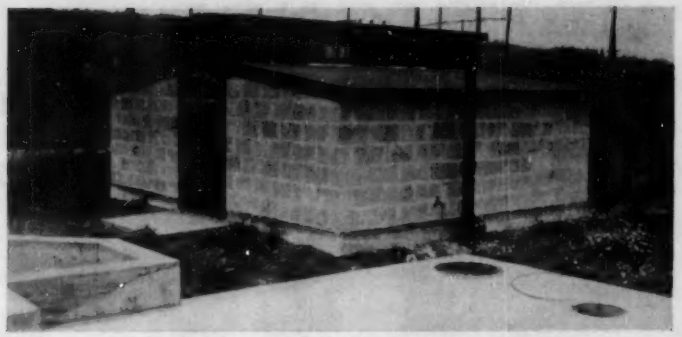
The big difference in traffic controls is that Electro-Matic® automatically proportions the green light to changing demands of traffic. Electro-Matic Traffic-Actuated Controllers *can* give you safe, efficient control of holiday, rush hour, or normal traffic.



To get proof of this statement, send for free literature— or better still, write and tell us about your traffic signal problems. We will be happy to discuss them with you.

AUTOMATIC SIGNAL
DIVISION
EASTERN INDUSTRIES, INC.
NORWALK • CONNECTICUT

Dog-Nuisance Problems Solved at Little Cost



Auburn's canine kennel—an exterior view.

By DAYTON A. WITTEN
Mayor
Auburn, Wash.

AFTER numerous complaints from citizens that stray dogs were tipping over garbage cans, damaging flower beds and gardens, and in some instances had bitten children, the Mayor referred the problem to the License Committee with instructions to make a thorough study and report back with recommendations to the Council.

The Committee's investigation showed a dire need for some control over stray dogs, but that the Police Department was powerless to act as long as there were no facilities to care for the animals after they were picked up. It was recommended, therefore that the city construct a dog pound and the Police Department be charged with the responsibility of enforcing the dog ordinance.

Illustrations and details furnished by Police Chief Charles Ludwig and City Engineer Alex Sonnichsen.

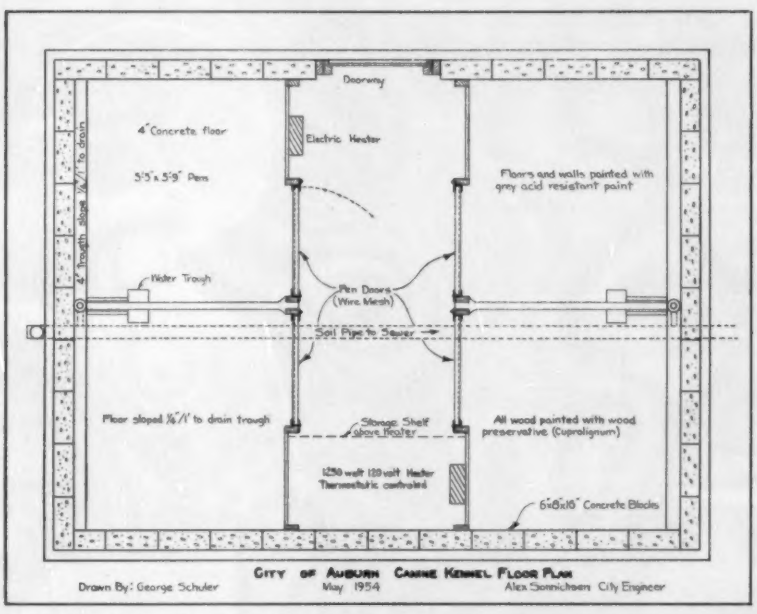
It was also recommended that the ordinance be amended to provide that owners who claim a dog shall pay a $2 fee for picking up the dog and $1 a day for feeding, and that if unlicensed, a permit for the dog be purchased at the time of the release from the pound.

Recommendations Accepted

The City Council accepted the recommendations and instructed the City Engineer to draw the plans and specifications for the Dog Pound. Construction proceeded promptly and the concrete-block building, at a cost of $1,675, is now in use and proving highly satisfactory.

An area 12 feet 18 inches by 16 feet 8 inches has been divided into four separate compartments, each 5 feet 9 inches by 5 feet 3 inches, and each capable of housing five dogs, making a total capacity of 20 dogs. Each compartment is furnished with a water trough having continuous running water. The concrete floor is sloped one-fourth of an inch per foot to a trough drain in the rear of each compartment, and this drain is connected with the sanitary sewer. The building is heated by two 1,250-watt, 120-volt, thermostatic-controlled electric heaters.

The floors and walls are painted with gray, acid-resistant paint to a height of 2 feet 6 inches. This was done to reduce the possibility of urine penetrating the concrete, thereby causing odors and decomposition of the concrete. All wood in the building is painted with two coats of wood preservative (Cuprolignum) to


Doorway
4" Concrete floor
Electric Heater
5'3" x 5'9" Pen
Floors and walls painted with gray acid resistant paint
4" Trough slope ¼" / ft. to drain
Water Trough
Pen Doors (Wire Mesh)
Soil Pipe to Sewer
Floor sloped ¼" / ft to drain trough
Storage Shelf above Heater
All wood painted with wood preservative (Cuprolignum)
1250 watt 120 volt Heater Thermostatic controlled
6"x8"x16" Concrete Blocks
City of Auburn Canine Kennel Floor Plan
Drawn By: George Schuler
May 1954
Alex Sonnichsen City Engineer

(Above) The Floor Plan. (Right) A portion of one compartment. Note watering and drain trough and metal covered door jams.

DESIGNED ECONOMY

will reduce your pipe-line costs

Each of American's six classes of reinforced concrete pressure pipe is designed for the most efficient utilization of its steel components. Nearly half a century of design refinement, exhaustive testing and field experience has produced composite designs which are completely adequate for safe resistance to all internal stresses and external loading conditions.

In these designs *all* of the materials are working for you. The result is a better pipe-line per dollar of investment. In addition, quality materials and sound workmanship ensure sustained high performance and low maintenance costs in the future.

Our 45 years of specialized design and manufacturing experience in the water works field is at your service. Write or call for complete information.

American PIPE AND CONSTRUCTION CO.

P. O. Box 3428, Terminal Annex, Los Angeles 54 - LOgan 8-2271

Main Offices and Plant: 4635 Firestone Blvd., South Gate, California
District Sales Offices and Plants—Oakland • San Diego • Portland, Ore.

Concrete pipe for main water supply lines, storm and sanitary sewers, subaqueous pipe lines

eliminates the possibility of fleas infesting the place. All exposed wood that might be damaged by dogs' teeth is covered with sheet metal.

The building is located on city-owned property at the site of the sewage-pumping plant in a heavy industrial area. It is approximately one-half mile from the police station.

The city does not have a Dog Catcher, but operates under a system whereby complaints of stray dogs are telephoned into the Police Department and the police make the pick-up. The Police Department has been very cooperative and realizes this is a disagreeable but necessary service to the community. This has proved very effective and satisfactory during the three months it has been in operation.

Urges President to Call Conference on Housing For Non-Whites

THE CALLING of a White House conference of leaders of lending institutions, home builders, real estate developers and appraisers, to consider means of increasing the housing supply available to non-whites was urged by the National Urban League last month in a letter and statement submitted to President Eisenhower. The statement highlights the need for action by calling attention to the fact that while over 9,000,000 new dwelling units were constructed by private enterprise between 1935 and 1950, only 100,000 of these new units, or slightly more than 1%, were available to non-whites.

Because new units have not been open generally to Negroes and others, the older housing in the hearts of cities has formed the bulk of the supply available to non-whites.

With the federal government about to embark on an ambitious "Urban Renewal" program to rehabilitate deteriorating housing and neighborhoods in heavily populated areas, the Urban League cautions that unless new housing is also made available to non-whites in the coming years, the rehabilitation program may be used as a device to force Negroes to continue to live in almost exclusively hand-me-down houses.

Although much progress has been made since 1948, when the Supreme Court declared the enforcement of racial restrictive property covenants illegal, the Urban League points out that devices of many sorts have been created to continue to limit private housing opportunities for non-whites. Some of these practices are:

> Withholding of credit financing from non-white buyers and invoking unfavorable or prohibitive credit terms;
> Trustee devices of taking and holding title to blocks of individually owned properties to control all sales, transfers, leasing and occupancy;
> Cash bond from individual owners of properties covenanted against non-whites, whereby any violation of the exclusive covenant forfeits the bond.

Stating that the Housing and Home Finance Agency of the federal government has estimated that 2,500,000 non-farm dwelling units should be provided between 1950 and 1960 through new construction, conversion, or rehabilitation to serve non-white requirements, the Urban League expressed confidence that contractors, builders, and others concerned with real estate would respond to a White House invitation to confer on the non-white housing problem.

The Supreme Court Decision on Segregation in the Public Schools

Excerpts from an Editorial in *The School Executive* for July 1954
By WALTER D. COCKING, *Editor*

MAY 17, 1954, will be recorded as one of the significant dates in the sweep of world history. On that date, the Supreme Court of the United States handed down its long-awaited decision which held in effect that separate public schools for Negroes were illegal in the national interest. The decision also provided that the states affected by the decision should place before the Court by October 1954, proposed plans for integrating white and Negro schools, before the Court issues its final decree. Thus after many years of contention and legal action, the death knell for segregation of races in the public schools was sounded.

In no way does the decision change the American tradition that the program of the public schools is basically a matter for local and state determination. The decision requires only that the organization of all public schools should be such that differentiation between races is no longer a factor. Hence, we must conclude that the decision deals primarily with social rather than educational policy.

It is also important to observe that the effect of the decision applies to all the public schools in the 48 states, not solely to the 17 states which have segregation by law. In fact, it may well prove to be more difficult to eliminate segregation in many of the communities which lie outside these 17 states, and which in the past have had no legal justification for segregated schools.

It is important to recognize that much has been done in the 17 states in past years to prepare for this reorganization of schools. The factor of race has more and more been eliminated in teachers' preparation and salaries. Great strides have been taken in recent years to provide equally good school plants for both races. The same standards of school transportation more and more have been applied to both races. Increasingly, white and Negro teachers have participated together in in-service preparation programs and school organization matters. In recent years the amount of school money expended per white and Negro child has tended to become equalized.

Gradual Change-over from Segregation Urged

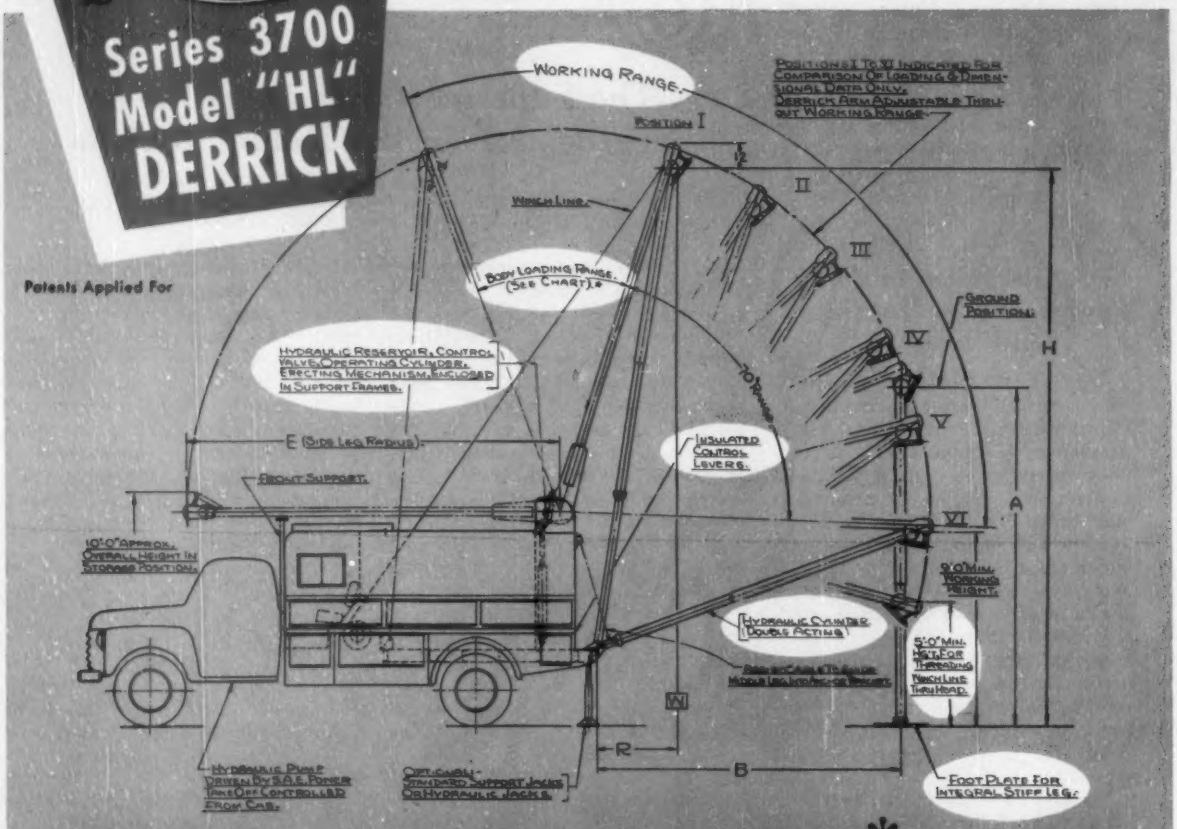
As I see it, the first step now is for men of good will and responsibility everywhere to recognize that segregation has to go. Regardless of individual opinion, the highest court in the land has so ordered. The next step is to recognize that constructive change takes place gradually, not suddenly. Let's hope that there will be no pressure for all states and communities to complete the required reorganization by a certain calendar date. From my point of view, it would seem wise for the Court in its final decree to permit each state to make its own plans and set its own time table for putting the necessary reorganization into effect. Equally so, I would hope that no state would try to perform the whole job of reorganization at one time. A constructive program of evolution rather than revolution is required.

Finally, I have a great respect for the calm and considered judgment of the vast majority of American citizens. The voices of a few demagogues may be loud and strident, but the still small voices of men of good will will surely and finally prevail.

THE NEW *Live Boom* THAT HAS BODY LOADING FEATURE AND OPERATING RANGE OF 195 DEGREES

A CLEVELAND, OHIO, April 2—(HC)—The new 12,000-pound capacity derrick *is a real heavy duty derrick* that can handle 70-foot poles with ease and load 5,000 pounds inside of the body.* The entirely new erecting mechanism with positive linkage has new super sensitive insulated controls. Operating range of 195 degrees permits 5-foot ground height for threading winch line through derrick head. Here's the only derrick, today, with *integral stiff leg*. Only one man is required to erect this derrick in 35 seconds and stow it in 40. Our side legs are not pinned together. To check these outstanding features, and others, ask for Bulletin Number 154.

Patents Applied For


WORKING RANGE.
POSITION I
POSITIONS I TO VI INDICATED FOR COMPARISON OF LOADING & DIMENSIONAL DATA ONLY. DERRICK ARM ADJUSTABLE THRUOUT WORKING RANGE.
WINCH LINE.
BODY LOADING RANGE. (SEE CHART) *
GROUND POSITIONS.
HYDRAULIC RESERVOIR, CONTROL VALVES, OPERATING CYLINDERS, ERECTING MECHANISM ENCLOSED IN SUPPORT FRAMES.
70°
E (SIDE LEG RADIUS)
INSULATED CONTROL LEVERS.
FRONT SUPPORT.
10'-0" APPROX. OVERALL HEIGHT IN STORED POSITION.
9'-0" MIN. HOOKING HEIGHT.
HYDRAULIC CYLINDER DOUBLE ACTING
5'-0" MIN. HGT. FOR THREADING WINCH LINE THRU HEAD.
HYDRAULIC PUMP DRIVEN BY S.A.E. POWER TAKE OFF CONTROLLED FROM CAB.
OPT. CABLE-STANDARD SUPPORT JACKS OR HYDRAULIC JACKS.
FOOT PLATE FOR INTEGRAL STIFF LEG.
H
A
R
B

SERIES 3700—MODEL "HL" OPERATING DATA

BODY LOADING RANGE CHART. CAP. 5,000 LBS.

MODEL	E	DIMENSIONS AND SAFE LOADS (W) TRUCK POSITIONS. POSITION I H	POSITION I R	POSITION II H	POSITION II R	POSITION III H	POSITION III R	POSITION IV H	POSITION IV R	POSITION V H	POSITION V R	POSITION VI H	POSITION VI R	GROUND POSITION. A	GROUND POSITION. B	BODY MODEL.	LOADING RANGE. HL-26	HL-24	HL-22
HL-26	18'-3½"	26'-0"	4'-0"	24'-4"	7'-9"	21'-7"	11'-2"	17'-9"	14'-0"	14'-4"	15'-5"	8'-1"	16'-2"	17'-0"	12'-6"	CL-112 CLC-138	8'-0"	7'-8"	7'-5"
		W=10,000#		W=6,000#		W=5,000#		W=4,000#		W=4,000#		W=4,000#		W=14,000#					
HL-24	16'-2½"	24'-0"	3'-6"	22'-4"	7'-0"	19'-0"	10'-0"	16'-4"	12'-5"	12'-10"	13'-8"	8'-6"	14'-1"	15'-0"	13'-6"	CM-138 CMC-164	8'-0"	7'-8"	7'-5"
		W=11,000#		W=7,000#		W=6,000#		W=4,500#		W=4,000#		W=4,000#		W=15,000#					
HL-22	14'-3½"	22'-0"	3'-4"	20'-4"	6'-6"	16'-1"	8'-11"	15'-4"	10'-11"	12'-4"	11'-10"	8'-0"	12'-2"	13'-0"	14'-2"	CH-156 CHC-182	11'-0"	11'-0"	11'-0"
		W=12,000#		W=8,000#		W=7,000#		W=5,000#		W=4,500#		W=4,000#		W=16,000#					

(HL-28 DATA ON REQUEST)

Another HOLAN "First"

J. H. HOLAN CORPORATION

MOBILE EQUIPMENT FOR PUBLIC UTILITIES

4100 West 150th Street • Cleveland 11, Ohio

Distributors

BAKER EQUIPMENT ENGINEERING CO.
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COPPERWELD STEEL INTERNATIONAL • 117 Liberty St., New York 6, N.Y., U.S.A.

Modern Water Rates

PART IV

FOSTORIA, OHIO

Rates Per Month

Volume of Water (in cubic feet)	*Charges* (per 1,000 cubic feet)
First 100	$0.80 (min.)
Next 900	2.00
" 3,000	1.87
" 5,000	1.75
" 6,000	1.62
" 7,000	1.50
" 8,000	1.37
" 9,000	1.25
" 10,000	1.12
" 11,000	1.00
" 15,000	.87
Excess	.75

Miscellaneous Regulations

1. Bills not paid before the 20th of the month are subject to a 5% penalty charge.
2. No fire-service charges are made; no restrictions are made on the use of water for lawn sprinkling or air conditioning.
3. City bills domestic users quarterly, others monthly.

General Data

Population served	16,000
Services (100% metered)	5,000
Hydrants	300
Valves	480
Miles of mains	37
Supply—wells	
Treatment—lime and soda ash softening, rapid-sand filtering	
Storage facilities—2 standpipes with 1,500,000 gallons 4 open reservoirs with 650,000,000 gallons	
Average demand	1.8 mgd
Plant capacity	3.0 mgd

Customer's Costs Per Month

Gallons	*Cubic Feet*	*Costs*
3,000	400	$1.40
5,000	667	1.92
10,000	1,333	3.22

Remarks

1. Present rates have remained substantially unchanged since 1930.
2. No water funds are diverted to other uses. No water is distributed free except to other municipal departments.
3. Meters are owned by water user and are placed in building occupied by user.
4. Bills are processed on a National Cash Register machine.

H. Lord
Superintendent

BROOKSHIRE, TEXAS

Rates Per Month

Volume of Water (in gallons)	*Charges* (per 1,000 gallons)
First 2,500	$2.25 (min.)
Next 2,500	.60
" 5,000	.50
" 10,000	.40
Excess	.30

Miscellaneous Regulations

1. A minimum charge of $2.25 is made for water use which includes 2,500 gallons or less.
2. A penalty of $1.00 is made on bills not paid by the 16th of the month.

General Data

Population served	1,012
Services (100% metered)	280
Hydrants	23
Valves	20
Miles of mains	5
Supply—wells	
Treatment—chlorination (HTH)	
Storage facilities—80,000 gallons	
Average demand	75,000 gallons daily
Plant capacity	420,000 gallons daily

Customer's Costs Per Month

Gallons	*Cubic Feet*	*Costs*
3,000	400	$2.55
5,000	667	3.75
10,000	1,333	6.25

Remarks

1. Rates have remained unchanged for many years.
2. Town owns the meters; places them in a meter box at the lot line.

Berl Gassner
Water Superintendent

BERWYN, ILL.

Rates Per Half-Year

Volume of Water (in cubic feet)	*Charges* (per 100 cubic feet)
First 2,200	$0.50 (min.)
Over 22,000	.25

Miscellaneous Regulations

1. Bills not paid in 30 days are subject to 10% penalty.
2. City may require a deposit equal to the estimated amount of the annual bill.
3. The city is divided into two sections and lawn sprinkling is permitted only on alternate days in each section and entirely prohibited on Sunday.
4. During periods of water shortages, the city restricts the operation of large air conditioners not equipped with water-conservation devices.

General Data

Population served	52,000
Services (100% metered)	11,900
Hydrants	780
Valves	10,000
Miles of mains	86
Source of supply—Lake Michigan	
Treatment—chlorination	
Storage facilities—two 250,000-gallon elevated tanks one 150,000-gallon standpipe 2,000,000-gallon covered reservoir	
Average demand	4.65 mgd
Plant capacity	7.50 mgd

Customer's Costs Per Half-Year

Gallons	*Cubic Feet*	*Costs*
18,000	2,400	$7.50
30,000	4,000	11.00
60,000	8,000	21.00

Remarks

1. Rates have been increased slightly in the past five years.
2. Water Department contributes no free water through any service, including other municipal departments.
3. No water funds are diverted to other municipal uses.
4. Meters are the property of the water user, are checked for accuracy every five years, and are placed in the building occupied by the user. Meters serving commercial accounts are read monthly; others are read every six months.
5. For convenience in making payments, the city has 11 business houses in various parts of the city called Water Collection Agencies.
6. Bills are prepared on an Underwood automatic billing machine.

Frank J. Broucek
Superintendent of Water

FOLEY, ALA.

Rates Per Month

Size of Meter (in inches)	*Minimum Charges*
¾	$1.60
1	3.00
1½	6.00
2	10.00
4	30.00

Volume of Water (in gallons)	*Metered Charges* (per 1,000 gallons)
First 2,500	minimum
Next 22,500	$0.30
Excess	.15

Miscellaneous Regulations

1. Department makes a charge for fire hydrants: two hose connections cost $30 per year; two hose connections and steamer, $50 per year.
2. For temporary water service, rates and minimums are increased 25%.
3. No restrictions are placed on lawn sprinkling or air conditioning.
4. Schools receive water at 15 cents per 1,000 gallons.

General Data

Population served	2,000
Services (100% metered)	617
Hydrants	51
Valves	166
Miles of mains	15
Supply—wells	
Treatment—Calgon and pH adjustment	
Storage facilities—60,000 gallons in an elevated tank	
Average demand	0.2 mgd
Plant capacity	1.0 mgd

Customer's Costs Per Month

Gallons	*Cubic Feet*	*Costs*
3,000	400	$1.75
5,000	667	2.35
10,000	1,333	3.85

Remarks

1. Water rates have remained unchanged for many years.
2. Department owns all meters; places most of them at the lot line.
3. Bills are prepared using Burroughs automatic machine.

Guy E. McAliley
Superintendent of Water

LONG BEACH, CALIF.

Rates Bimonthly

Size of Meter (in inches)	*Service Charge*
⅝ or ¾	$ 1.20
1	1.80
1½	3.00
2	5.00
3	10.00

(*Continued on page 159*)

"American Water Meters protected our investment by their low maintenance cost"

"**We buy water meters** as a 30-year investment. Naturally we want to protect our investment by keeping our meters in the best possible condition at the lowest possible cost. We've found that the exceptional simplicity of AMERICAN METERS has greatly reduced our maintenance expenses. Fully interchangeable parts are always available for AMERICAN METERS. We've found that true in using AMERICAN METERS for the past thirty years.

"On the basis of past performance, our expected cost per thousand gallons measured will be lowest with AMERICAN METERS. That's why we plan on using them for the next thirty years."

• Write for complete information . . . today,

BUFFALO METER CO.

2902 Main Street, Buffalo 14, N. Y.

4	.....	20.00
6	.....	40.00
8	.....	70.00
10	.....	100.00
12	.....	150.00
16	.....	250.00

Volume of Water (in cubic feet)		*Metered Charge* (per 100 cubic feet)
First 10,000	.....	$0.21
Next 20,000	.....	.17
" 40,000	.....	.15
" 330,000	.....	.10
Over 400,000	.....	.08

Miscellaneous Regulations

1. Department bills 97% of its customers bimonthly, and the remainder monthly. Monthly service charges and metered quantity blocks are half the tabulated rates.

2. Large services may use a single meter or a battery of meters whose typical equivalents are as follows:
Two 2-inch equals one 3-inch
Two 3-inch or four 2-inch equals one 4-inch
Two 4-inch or four 3-inch equals one 6-inch
Two 6-inch or four 4-inch equals one 8-inch

3. Although the customer pays the cost of installation, there are no private fire-service charges. Neither is there a public fire-service charge inside the city, but a charge of $3.00 per month per hydrant is made for public fire protection outside the city.

4. No restrictions exist on the use of water for lawn sprinkling or air conditioning.

5. Metered rates to federally-operated areas outside the city limits are 4 cents higher per block.

General Data

Population served	275,000
Services (100% metered)	61,800
Hydrants	3,860
Valves	13,910
Miles of mains	638
Supply—wells and Colorado River	
Treatment—wells—taste and odor control river—softening	
Storage facilities—100,000,000 gallons in covered reservoirs	
Average demand	33.6 mgd
Plant capacity	90 mgd

Customer's Costs Bimonthly (¾-inch service)

Gallons	*Cubic Feet*	*Costs*
6,000	800	$2.88
10,000	1,333	4.00
20,000	2,667	6.80

Remarks

1. These rates went into effect in June 1953. In the past five years rates have increased 35%.

2. The department contributes free water to other city departments to the extent of $75,000 per year.

3. No water funds have been diverted to other city departments since 1947.

4. Department owns all meters, places them in a box at the curb line, and checks them for accuracy once every 10 years.

5. Bills are prepared on an International Business Machine automatic billing machine.

BRENNAN S. THOMAS
General Manager

FAIRLAWN, N. J.

Rates

Size of Meter (in inches)		*Fixed Charges* (per month)
¾	.....	$ .50
1	.....	.85
1¼	.....	1.00
1½	.....	1.16
2	.....	1.33
3	.....	1.85
4	.....	10.00
6	.....	28.33
8	.....	33.33

Volume of Water (in gallons)		*Quarterly Metered Charges* (per 1,000 gallons)
First 100,000	.....	$0.30
Next 100,000	.....	.25
" 100,000	.....	.20
Excess	.....	.15

Miscellaneous Regulations

1. City occasionally restricts use of water for lawn sprinkling but not for air conditioning.

2. Standby charges for private fire protection are annual: for 4-inch service connection, $120; 6-inch, $250; 8-inch, $400.

General Data

Population served	30,000
Services (96% metered)	8,132
Hydrants	850
Valves	3,500
Miles of mains	91
Supply—15 deep wells	
Treatment—chlorination	
Storage facilities—1,300,000 gallons in elevated tanks	
Average demand	2 mgd
Plant capacity	4 mgd

Customer's Costs Per Quarter

Gallons	*Cubic Feet*	*Costs*
9,000	1,200	$4.20
15,000	2,000	6.00
30,000	4,000	10.50

Remarks

1. Rates have remained unchanged for many years.

2. Department supplies water free to other city departments only.

3. Surplus funds are contributed to the general fund.

4. Department owns water meters; places them in the building occupied by user.

5. Bills are prepared on a National Cash Register billing machine.

FRANK KNAPP
Water Superintendent

SANTA CRUZ, CALIF.

Monthly Rates

Size of Meter (in inches)		*Minimum Charges* (for 500 cubic feet or less) Inside City	Outside City
⅝	.....	$ 1.25	$ 1.50
¾	.....	1.50	1.75
1	.....	1.75	2.00
1½	.....	2.50	2.75
2	.....	3.25	3.50
3	.....	5.00	5.25
4	.....	6.25	6.50
6	.....	9.00	9.25
8	.....	11.50	11.75

Volume of Water (in cubic feet)		*Metered Rates* (per 100 cubic feet) Inside City	Outside City
From 500 to 2,000	.....	$0.15	$0.20
Next 3,000	.....	.12	.15
" 5,000	.....	.10	.12
" 10,000	.....	.07	.10
Excess	.....	.07	.07

Fire Protection (private connections)

Service Line (in inches)		*Charges* (per month)
4 or less	.....	$ 4.00
6	.....	6.00
8	.....	8.00
10	.....	10.00

Miscellaneous Regulations

1. Department makes a negotiated hydrant charge to fire-protection districts outside the city limits.

2. The department places no restrictions on use of water for air conditioning or lawn sprinkling.

General Data

Population served	30,000
Services (100% metered)	11,250
Hydrants	800
Supply—river (pumped supply); streams (gravity supply—Chlorination only)	
Treatment—rapid-sand filtration, pre- and post-chlorination	
Storage—30,000,000 in open reservoirs 6,800,000 in covered reservoirs	
Average demand	4.8 mgd
Plant capacity	14 mgd

Customer's Costs Bimonthly (inside city)

Gallons	*Cubic Feet*	*Costs*
6,000	800	$2.50
10,000	1,333	3.95
20,000	2,667	5.05

Remarks

1. These rates were established in 1950 and represent a 40% increase. The rate schedule is on a monthly basis. However, all except irrigation, industrial, and commercial users are billed bimonthly.

2. The department charges for all water except that used by other municipal departments and users with right-of-way agreements.

3. The department contributes $15,000 annually to the city's general fund.

4. The city owns all meters and places them in boxes at the lot line.

5. Bills are processed on an Underwood-Sundstrand automatic machine. Refuse and sewer-service charges also are carried on the same bill.

W. L. WEBBER
Water Superintendent

LA MESA, CALIF.

(La Mesa, Lemon Grove & Spring Valley Irrigation District)

Minimum Charges Bimonthly

Size of Meter (in inches)		Non-Tax Deeded	Tax Deeded
⅝	.....	$1.00	$5.00
¾	.....	1.50	6.00
1	.....	2.00	7.00
2	.....	4.00	9.00
3	.....	7.00	10.00
4	.....	12.00	12.00

Metered Rates Bimonthly

Volume of Water (in cubic feet)		(charges per 100 cubic feet) Non-Tax Deeded	Tax Deeded
First 2,000	.....	$0.25	$0.417
Next 4,000	.....	.20	.30
Excess	.....	.07	.093

Miscellaneous Regulations

1. The District charges a deposit on temporary meters—from $100 for a ⅝-inch meter to $600 for a 4-inch meter. Temporary services pay for water at the rate of $0.25 per 100 cubic feet.

2. A 5% penalty is charged against all bills not paid before the twelfth of the month.

3. The District places no restrictions on water used for lawn sprinkling or air conditioning.

General Data

Population served	65,159
Services (100% metered)	21,237
Hydrants	1,229
Valves	3,682
Miles of mains	339
Supply—Colorado River, standby wells, mountain runoff	
Treatment—chlorination	
Storage facilities—raw-water reservoirs, 7,900,000,000 gallons ground-water bed, 1,000,000,000 gallons standpipes, 8,665,000 gallons open reservoirs, 111,000,000 gallons	
Average demand	12.5 mgd
Diversion to system	25 mgd

(*Continued on page* 161)

WE PLEAD GUILTY

To Improving Water Meter Performance

Chances are the meters you bought 20 or more years ago are costing you money way out of proportion to their revenue earning capacity. These old meters, even when new, could not approach the performance we're building into meters today.

We've worked constantly for improvement and our meters show it. Engineering, research and manufacturing have combined their talents to make Rockwell meters measure at top accuracy for longer periods at lower cost.

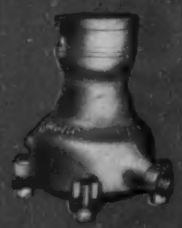
So think twice before again repairing a meter that creaks with age. Think first of the costs in parts and labor and weigh them against the cost of a new Rockwell. Then think of the greater revenue a new Rockwell will earn for you.

Let the Rockwell representative furnish proof that a planned program of meter replacement will so materially benefit your overall operations that it will more than pay for itself.

Rockwell Modern Meters For Modern Measurement Needs

ARCTIC
Disc Type

TROPIC
Disc Type



EMPIRE TYPE 12
Piston Type

EMPIRE TYPE 14
Piston Type

The Symbol for Service, Quality and Performance in Water Meters

ROCKWELL MANUFACTURING COMPANY
PITTSBURGH 8, PA. Atlanta Boston Chicago Houston
Los Angeles N. Kansas City New York Philadelphia
Pittsburgh San Francisco Seattle Tulsa
In Canada: Peacock Brothers Limited

Customer's Costs Bimonthly (non-tax deeded)

Gallons	*Cubic Feet*	*Costs*
6,000	800	$2.00
10,000	1,333	3.25
20,000	2,667	6.14

Remarks

1. The District distributes no free or discounted water.
2. The District owns the meters, places them in a meter box at the lot line, and checks them for accuracy once every 10 years.
3. Bills are prepared on a National Cash Register billing machine.
4. Rates have remained unchanged since 1947.

M. J. SHELTON
General Manager and Chief Engineer

Marin Municipal Water District
SAN RAFAEL, CALIF.

Rates Per Month

Size of Meter	*Minimum Charges* (include 300 cubic feet)
¾	$1.50
¾	1.75
1	2.25
1½	3.25
2	5.25
3	8.75
4	13.25
6	25.75
8	40.75

Volume of Water (in cubic feet)	*Metered Charges* (per 100 cubic feet)
From 300 to 5,000	$0.235
Next 5,000	.22
" 5,000	.205
" 5,000	.19
Over 20,000	.175

Fire Protection Rates Per Month
Public

Per Hydrant (in inches)	*Charge*
2	$0.50
3	.75
4	1.00
6	1.50

Private

Per Fire Line (in inches)	*Charge*
2	$1.50
4	3.00
6	6.00
8	9.00

Miscellaneous Regulations

1. No additional charge, other than those listed, is made for water used in actual fire protection.
2. No restrictions are placed on the use of water for lawn sprinkling or air conditioning.

General Data

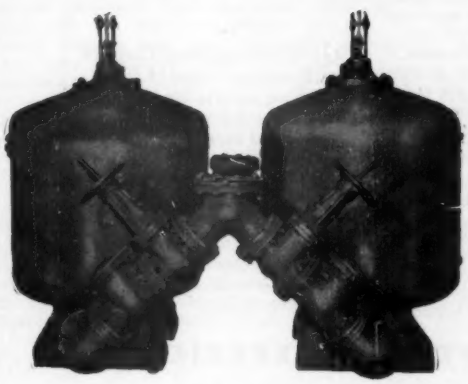
Population served..... 80,000
Services (100% metered)..... 24,883
Hydrants..... 2,300
Valves..... 6,285
Miles of mains..... 550
Supply—impounding reservoirs
Treatment—chlorine, alum, rapid-sand filtration
Storage facilities—11,200,000 gallons in open reservoirs
16,158,000 gallons in covered reservoirs
Average demand..... 12.5 mgd

(*Continued on page* 162)

THE MODERN WAY

TO LIFT SEWAGE AND SLUDGE AT TREATMENT PLANTS

USE BLACKBURN-SMITH PNEUMATIC SEWAGE EJECTORS



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PREFERRED by most prominent consulting engineers as **LESS MESSY MORE SANITARY** than centrifugal submerged type sewage ejectors or pumps.

ENDS CLEANING of screens and pumps.

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30 to 500 GPM in both single and twin units against high discharge heads.

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1. Float and electrical float switch controls.
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Any one of the above, with or without Air Receiver.

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"Magnified-Beam" seen for great distances. Wide, non-tip base. Long burning, economical. Stands rough usage.

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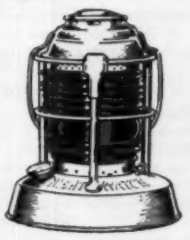
A miniature beacon—with new "Pencil Beam"—visible from any direction, near and far. Longest burning—over 100 hours on a pint of kerosene.



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Complete line of bomb and flat base, Dietz *Blue* threaded collar burner models, and Dietz-Embury *Red* cam lock burner models. Tops in rugged quality.

DIETZ LANTERNS

SINCE 1840

Send for Descriptive folders

EST. R. E. DIETZ COMPANY SYRACUSE 1, N. Y. 1840

Plant capacity..... 24.5 mgd

Customer's Costs Per Month

Gallons	*Cubic Feet*	*Costs*
3,000	400	$1.74
5,000	667	2.36
10,000	1,335	3.92

Remarks

1. These rates have been in effect since 1930.
2. No water is distributed free. No water funds are diverted to other municipal uses.
3. Water department owns all meters and places them at the lot line.
4. Bills are prepared with a Burroughs automatic billing machine.

WILLIAM R. SEEGER
Assistant General Manager

KINGSTON, N. Y.

Rates Per Quarter

Volume of Water (in cubic feet)	*Metered Charges (per 1,000 cubic feet)*
First 2,800 or less	$6.75 (min.)
Next 2,500	2.50
" 5,000	1.65
" 10,000	1.05
" 80,000	.70
" 400,000	.50
Over 500,000	.40

Flat Rates Per Year

Per Fixture	*Charges*
First faucet	$8.00
each additional	2.60
First bathtub	6.60
each additional	2.60
Use of bath	4.00
First toilet	5.40
each additional	2.60
Use of toilet	4.00
Set of laundry tubs	2.60
Shower over tub	3.00
Stall shower	6.60
Clothes or dish washer	3.00
Sill faucet	2.60

Miscellaneous Regulations

1. There are no separate charges for fire service, or restrictions on the use of water for air conditioning.
2. During the summer lawn sprinkling is restricted to 7:00 to 9:00 a.m. and p.m.

General Data

Population served	29,000
Services (13% metered)	7,591
Miles of mains	102
Supply—lakes	
Treatment—chlorination only	
Storage facilities—500,000-gallon elevated tank 1,000,000-gallon standpipe	
Average demand	4.5 mgd
Plant capacity	9 mgd

Customer's Costs Per Quarter

Gallons	*Cubic Feet*	*Costs*
9,000	1,200	$6.75
18,000	2,000	6.75
50,000	4,000	11.30

Remarks

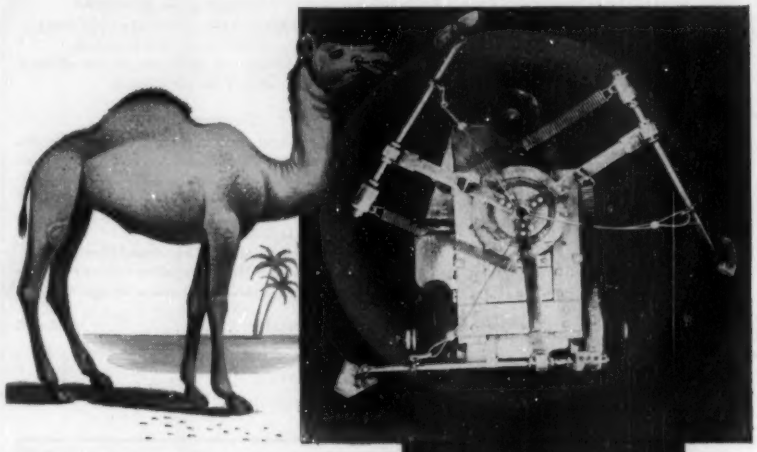
1. These rates went into effect in April of this year. They represent an increase of about 33⅓%.
2. The department distributes no free water. No water funds have been diverted to other municipal uses since 1949.
3. Meters are used chiefly for commercial and industrial services.
4. Meters are owned by the department and placed in the building occupied by the user.
5. Bills are prepared without the use of automatic billing equipment.

EDMUND T. CLOONAN
Superintendent of Water

Somersworth Regains Its Economic Balance

THE PUBLISHER of the *Free Press* of Somersworth, N. H., Mrs. T. A. Coolidge, writes to THE AMERICAN CITY:

"When the textile mills left New England in the '30's, this city was badly hit by a drop in employment. It was such a staggering blow, that it was not until the war years that Somersworth regained its economic balance. Impetus in trade and economy was given its greatest inoculation in late 1948, when the General Electric Company decided to move its meter department from West Lynn to this city. I would say the greatest benefit to Somersworth in the past five years has been the growth of this industry here into the largest industrial unit in Strafford County, giving employment to more than 1,200 of its people."



CENTRILINE goes to Aden

Deep in the middle east, Centriline is currently centrifugally lining 11,920 feet of salt water mains for the Anglo Iranian Petroleum Company's Aden Refinery. The mains vary in diameter from 24" to 74" and are being lined with cement mortar in thicknesses of from ⅜" to ¼". The General Contractor, George Wimpy & Co. of England and the Pipe & Erection Contractor, Bechtel International Corp. of San Francisco, selected the Centriline process for the same reasons that have made it famous across the United States . . . guarantee against interior leakage, corrosion and tuberculation . . . low pumping costs . . . and high carrying capacity. Whether old or new, when a pipe is Centrilined its life is extended indefinitely. For complete details, call on Centriline today.

3,000,000 FEET OF EXPERIENCE

CEMENT-MORTAR LINING OF PIPES IN PLACE

CENTRILINE CORPORATION
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140 CEDAR STREET • NEW YORK 6, N.Y.
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Zoning and Planning Notes

Edited by NORMAN WILLIAMS, Jr.

Minimum Building Size Again

PENNSYLVANIA. *Appeal of Springfield Township*, 104 Atlantic Reporter (2d) 118 (Supreme Court, March 24, 1954).

The local zoning ordinance here provided a series of minimum-building restrictions in the various zoning districts, with 1,800 square feet required for two-story houses in the most restrictive districts, and 1,400, 1,125, and 1,000 square feet in the other districts. In this case it was proposed to build a farm house in the "early 1700 Colonial Bucks County" style, costing over $20,000 but with only 1,125 square feet, on a 1½-acre tract in the most restrictive district. It appeared that for 20 years the petitioners had been collecting authentic material for such a house, and that they did not have enough such material for a larger house conforming to the ordinance provisions. The Court invalidated the ordinance.

In the opinion, the Court followed recent Pennsylvania tradition in quoting recent decisions emphasizing property rights. However, the Court also noted that this ordinance could not be defended on public-health grounds, partly because "there was no attempt or intent to measure the habitable area of a home by the number of persons who would occupy it," and partly because of the sliding scale —it is obviously difficult to argue that, if 1,800 square feet is needed for reasons of public health in one district, 1,000 is plenty in other districts.

The latter of these two points serves to distinguish this case from *Lionshead Lake v. Wayne Township*, (*See* THE AMERICAN CITY, October 1951, November 1951) and a few other recent cases where minimum-building-size regulations were upheld. (On the other hand, there were some elements in the *Lionshead Lake* case which were more extreme and more difficult to uphold.) Yet the first of the two points is the more significant. Since such ordinances are not concerned with occupancy, it is difficult to see how they can be defended on the ground that prevention of overcrowding is necessary to protect public health. What is clear is that such ordinances are in fact designed to promote residential segregation by income groups, which raises much more serious constitutional problems in a democratic society. The existence of a sliding scale within a single municipality merely makes this clearer—a point which the Pennsylvania Court realized, but which the dissenting judges in the *Lionshead Lake* case missed.

Nurses' Dormitory As "Single-Family Residence"

KENTUCKY. *Robertson v. Western Baptist Hospital*, 267 South Western (2d) 395 (Court of Appeals, January 29, 1954).

In this case, the Paducah zoning ordinance defined a family as "one or more persons living as a single housekeeping unit, as distinguished from a group occupying a hotel, club, fraternity or sorority house." After the proposed conversion of a large house, a group of about 20 nurses employed at a nearby hospital would occupy rooms either singly or in pairs, with joint use of the parlor. Regular meals would be provided by the hospital, but limited kitchen facilities would be available in the dormitory for light lunches and snacks. The Court held that these nurses would constitute a "single housekeeping unit," and should therefore be considered as a single family. (Conversions of existing buildings to multiple occupancy were permitted in the district, under certain conditions, but the case did not turn upon this point.) The exclusion of a fraternity or sorority was held to involve very different considerations, such as the likelihood of increased noise, etc.

This decision indicates again the importance of detailed and complete listing of permitted uses to provide real protection in residential districts, and for that matter also in other districts.

Subdivision Control— Refusal of Approval Because Of Inability to Provide Public Services

CONNECTICUT. *Beach v. Planning and Zoning Commission of Town of Milford*, 103 Atlantic (2d) 815 (Supreme Court of Errors, March 9, 1954).

This case involved the proposed subdivision for 145 single-family residences of a 50-acre tract in an area zoned for residential or agricultural purposes. Under the Connecticut planning statutes, the Town of Milford was authorized to adopt, and had adopted, provisions to regulate new subdivisions, but no local master plan had been adopted.

The local planning commission refused to approve the subdivision, on the sole ground that the Town's financial difficulties made it impossible to provide adequate school, police and fire protection services for the population of the proposed development. Apparently, it was agreed that the proposed subdivision complied with the adopted subdivision regulations. Both the lower and the highest Connecticut courts held that this refusal was invalid.

In the opinion, the Connecticut Supreme Court stressed that under the enabling act the adoption of regulations was a condition precedent to the planning commission's power to regulate subdivisions, and so it was held that, once such regulations were adopted, the commission could only act thereunder. Since the adopted regulations did not authorize the commission to refuse the permit on this ground, such action was held invalid. The Court also held that the planning commission's action in this case could not be interpreted as valid legislative action to impose such a further requirement, since the proper legislative procedure had not been followed; and it was also indicated that such an action in this case would constitute special legislation of the worst type.

What is involved here is the question of the timing and location of new development, and its impact on the need for new public facilities. In deciding a case upon these statutory grounds, the Court—true to traditional judicial policy — avoided a decision on the important constitutional problem presented here. The State of Washington has explicitly authorized communities to regulate where new development should go, and when; but this law has apparently been little used, and has not been tested. Communities elsewhere have been using acreage zoning or other devices to accomplish the same purpose. However, there has been no real judicial clarification of two constitutional questions —whether a community may regulate the order of development and whether development can be forbidden because of the cost of public facilities to serve it.

Convalescent Home Excluded From Single-Family District

MISSOURI. *Kellog v. Joint Council of Women's Auxiliaries Welfare Association*, 265 South Western (2d) 374 (Supreme Court, March 8, 1954).

A large brick mansion, 3 stories high and with 13 large rooms and a ballroom, was located in a group of similar houses, constructed around the turn of the century and well-maintained; and this case involved the proposed conversion of this mansion to a convalescent home. The single-family residential restrictions in this block had been upheld by the Supreme Court twice before.

In the opinion, the Court held that it could not be said that there was no rational foundation for the single-family zoning of this property, and that the convalescent home was therefore not permitted there.

Navigability of Lake

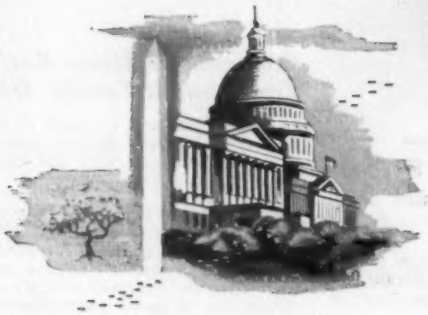
MINNESOTA. *State ex rel. Burnquist v. Bollenbach*, 63 North Western (2d) 278 (Supreme Court, January 29, 1954).

A Minnesota statute authorized condemnation of land to provide access to, and an area (not exceeding 5 acres) for purposes of public recreation on, any lake where the public had a right to hunt and fish—i.e., any lake which was navigable in 1858, the year Minnesota was admitted as a State. This case involved condemnation proceedings for an area adjoining Five Lake, a small body of water (with an area of about ⅛ of a square mile) in west-central Minnesota; and the opinion contained an interesting summary of historical evidence dealing with use of the lake in Indian times and later. In brief, it appeared that the lake had a connection by water with one other lake in periods of very high water, but not otherwise; that the second lake never had any water connection with anywhere else; and further that neither lake was anywhere near any place else where anybody would dream of navigating anything. The Court accordingly held that the statute did not permit condemnation of land around this lake.

WASHINGTON, D. C.

PREFERS

Concrete Pressure Pipe



The District of Columbia, home of the Nation's capitol, recognizes the advantages of concrete pressure pipe. From 1925 to the present, over 175,000 feet of concrete pressure pipe have been installed in this congested 69 square mile area. Pipe diameters range from 20″ to 78″, with heads from 70 up to 450 feet. A substantial part of this footage is in use in the Washington, D. C. distribution system.

Washington engineers consider economy and length of service of primary importance when specifying water pipe . . . also, high carrying capacity, and ease of installation. Because concrete pressure pipe meets these and other exacting requirements, it has been selected time and again for new supply mains and extensions to the distribution lines.

If your community is planning additional water lines, or replacements for old lines, check into the advantages of concrete pressure pipe. It is available in sizes from 12″ to over 12′ in diameter, for high or low heads, and can be installed to fit your individual requirements.

Member companies are equipped to manufacture and furnish concrete pressure pipe in accordance with established national specifications and standards.

Concrete PRESSURE Pipe

WATER FOR GENERATIONS TO COME

AMERICAN CONCRETE PRESSURE PIPE ASSOCIATION
228 North LaSalle Street
Chicago 1, Illinois

Legal Notes and Decisions

Prepared by NATIONAL INSTITUTE OF MUNICIPAL LAW OFFICERS
Charles S. Rhyne, General Counsel

Airport—Sale of By City Not "Legislative" Act

Where statute permitting ordinances legislative in character to be initiated by electors of municipality under initiative section of commission form of government act, held that proposal to sell municipal airport was not legislative in character and therefore not proper to be initiated by electors. *People* v. *City of Centralia*, 117, N. E. (2d) 410 (Ill. App., Dec. 14, 1953) *Reh. den.* Feb. 14, 1954.

Annexation Petition Held Sufficient

In action to test validity of annexation ordinances where petition contained signatures of 110 of 179 electors who were owners of 211 of the total of 314 acres within such area sought to be annexed, held that compliance with statutory requirement was met. *Town of Wauwatosa* v. *City of Milwaukee*, 62 N. W. (2d) 718 (Wis., Feb. 2, 1954).

Bonds—Water and Sewer—Not Within Debt Limitation

In mandamus to compel Attorney General to approve certain municipal bonds for recreational purposes where reason for refusal was that such bonds, if issued, when added to amount of outstanding bonds of city, including water-refunding and sewer-disposal bonds would exceed 4% debt limitation prescribed by constitution, held that water and sewer bonds are not to be considered in computing amount of bonds which may be issued for other purposes by municipalities. *City of Truth or Consequences* v. *Robinson*, 266 Pac. (2d) 356 (N. M., Jan. 27, 1954).

City Council—Rezoning Amendment—Three Fourths of Those Voting Rule

Where statute requires a favorable vote of three fourths of "all members of the legislative body" of the city for rezoning, held that three favorable votes was sufficient to carry where all five aldermen were present and one disqualified himself, since only three fourths of four members voting was required. *City of Alamo Heights* v. *Gerety*, 264 S. W. (2d) 778 (Tex. Civ. App., Jan. 27, 1954).

City Investigations—Firemen—Dismissal for Refusal to Sign Waiver Of Immunity in Grand Jury Inquiry

Where fire department official, under grand jury investigation of affairs of firemen's association, refused to sign a waiver of immunity and testified only after a promise not to prosecute him for any crime which his testimony might disclose, held that termination of his employment was proper under provision of New York Charter authorizing termination of tenure of office of city employees refusing to waive immunity before certain hearings. *Crane.* v. *Monaghan*, 127 N. U. S. (2d) 679 (N. Y. Sup. Ct., Spec. Term. N. Y. Cty., June 11, 1953).

Contracts—Payment for Extra Work Denied

In action against city to recover for work in addition to that contracted for, held that acceptance of check by contractor constituted release of all claims for extra work and that even though department head gave written agreement as to price for extra work, comptroller had power and duty to pay only reasonable value. *Gerace and Castagna* v. *City of New York*, 127 N. Y. S. (2d) 351 (N. Y. Sup. Ct. App. Div., Feb. 1, 1954).

Emergency Vehicles—Police Car—Evidence Must Show Siren and Red Light Operating

In action by pedestrian who was struck by car after police car collided with another, held that city had burden of proving compliance with statutory exemption respecting emergency vehicles as an affirmative defense and where no evidence that siren in police car was sounded and whether red light was displayed judgment against city would be affirmed. *Washington* v. *City and County of San Francisco*, 266 P. (2d) 838 (Cal. App., Feb 17, 1954).

Inflammable Liquids—Varnish and Alcohol Within Statute Requiring License

Where statute required a license and permit from department of safety when inflammable liquids in excess of 156 gallons are kept in a building, held that the handling of varnish and alcohol by a manufacturer of plastic laminates in ordinary course of business in "batches" exceeding 156 gallons constitutes the "keeping of fluids in a building" and requires a license and a permit. *City of Newton* v. *Reiss Associates*, 117 N. E. (2d) 294 (Mass., Feb. 1, 1954).

Notice of Claim—Injury to Child On County Dump—Late Filing Fatal

In action for injuries incurred by child while playing on county dump, held that filing of claim eight and one-half months after injury was too late where statutory procedure allowed 90 days maximum. *Albaeck* v. *Santa Barbara County*, 266 P. (2d) 844 (Cal. App., Feb. 18, 1954).

Off-Street Parking Facilities, Municipal Parking Meter Revenue To Finance Bonds Upheld

In action by parking-lot owners to prevent city from using parking-meter funds for purpose of establishing municipal off-street parking facilities, held that parking meters were "public improvement" within meaning of Revenue Bond Act authorizing cities to acquire off-street parking facilities, and that revenues from on-street parking meters could be combined with municipally-owned and operated off-street parking facilities for financing issuance of revenue bonds to acquire said facilities. *Petition of City of Detroit et al*, 62 N. W. (2d) 626 (Mich., Feb. 18 1954).

Plumbers—Licensee of One City Need Not Take Exam in Another City

In action by plumber holding master plumber's license issued by Oklahoma City for permit in City of Norman, held that under statutes requiring examination and licensing of all plumbers in all cities and towns of over 2,000 population, the city of Norman was not authorized to require applicant to take further examination before issuing such permit upon proper application therefor. *Claxton* v. *Borrowman*, 266 P. (2d) 966 (Okla., Jan. 12, 1954).

Sales Tax Exemption Denied Building Contractor for City

In action by City of Macon and contractor who contracted to build city's waterworks, to recover, for use of the city, sales tax paid on property purchased within state and use tax paid on property purchased without the state by contractor, held that contractor was not agent of city and thus was liable for both taxes even though tax exempt city would ultimately acquire the property. *J. W. Meadors & Co.* v. *State*, 80 S. E. (2d) 86 (Ga. App., Jan. 30, 1954).

Sewer Service Charges—Flat Rate Illegal Where Some Properties Assessed for Cost

In action against City of Montgomery to have sewer-service charge declared invalid, held that, under statute, flat rate for all properties served by system was illegal where statute limited levy to a charge appropriate for the use of such part of the system serving the property which was not paid for by assessment. *Water Works and Sanitary Sewer Board* v. *Sullivan*, 69 So. (2d) 709 (Ala., Nov. 5, 1953).

Streets—Right of Council to Vacate

In action by taxpayer to set aside proceedings of Port Clinton Council vacating street, and for judgment ordering owners to remove their buildings from street, held that, under statutes, city council is authorized to vacate a street whenever, in exercise of sound discretion, such action will not be detrimental to public interest. *Zetzer* v. *Lundgard*, 117 N. E. (2d) 445 (Ohio App., Feb. 3, 1954).

Tax Exemption—Nonprofit Nursery School Entitled To

In action by nonprofit nursery school corporation to have real estate tax assessed by village cancelled and be declared exempt from such taxes, held that corporation comes within statute exempting property belonging to nonprofit educational institutions. *Croton Community Nursery School* v. *Coulter*, 127 N. Y. S. (2d) 416 (N. Y. Sup. Ct. App., Div., Feb. 1, 1954).

Torts—Injuries By Policeman's Horse—City Liable

In action against City of Newark for injuries sustained when kicked by policeman's unattended horse while feeding it sugar, held that where city permits active wrongdoing after notice thereof it comes within the exception to immunity of municipality from liability for tortious conduct in governmental function. *Kelley* v. *Curtiss*, 102 A. (2d) 471 (N. J., Jan. 18, 1954).

Water Service—City May Cut Off On Failure to Pay Sewage Charges

In action to test validity and right of city to pass ordinance giving officials authority to shut off water supply to consumer for failure to pay sewage-disposal charge, held that grant by legislature to city of power to shut off water to those who were delinquent in paying either water or sewage charges and exercise of such power was not unlawful or unreasonable. *Ripperger* v. *City of Grand Rapids*, 62 N. W. (2d) 585 (Mich., Feb. 18, 1954).

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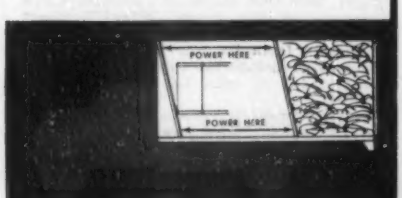

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Recent City Manager Appointments

The following portraits are of city managers whose appointments have been announced in preceding issues of *The American City*

Roland F. Burke
Hartford, Vt.

David S. Clark
Tappahannock, Va.

W. E. Lawson, Jr.
Delray Beach, Fla.

George Farrell
Roseburg, Wash.

James E. Clay
Morehead, Ky.

South Burlington, Vt. has appointed WALTER O. ANDERSON, formerly personnel manager in a private business, to succeed Leslie Walker as city manager.

John P. Batcheider left the post of Village Administrator of Pelham Manor, N. Y., to accept an appointment as Township Manager of Parsippany, Troy Hills Township, N. J.

The first manager of Joplin, Mo., is J. D. BAUGHMAN, former manager of St. Clair Shores, Mich.

CLARENCE J. BUCKLEY, a former public accountant and auditor, was appointed city manager of Milbridge, Maine, succeeding Harold L. Thurlow.

The first city manager of Arlington Heights, Ill., is F. R. BUECHNER, one-time manager of Flint, Mich.

GLEN A. DOTY, formerly assistant manager at Alice, Texas, has been appointed first city manager of Breckenridge, Texas.

ALBERT GRAY, JR., left the managership at Manistee, Mich., to become the first city manager of Wethersfield, Conn.

Mt. Holly, N. J. has appointed WILLIAM P. HATCH, former manager of Clarks Summit, Pa., as its first city manager.

Lisbon, Maine, has appointed the former manager of Machais, Maine, JERRY G. HAYNES, to succeed Allen L. Wilcox as city manager.

FRANK K. KYLE, formerly administrative assistant at Kansas City, Mo., has been appointed city manager of Chadron, Nebr., succeeding Water C. Brown.

Manchester, Vt. has appointed WALTER I. LELAND, a former management intern, to succeed George A. Randall as city manager.

Succeeding J. D. Baughman as city manager of St. Clair Shores, Mich., is ADRIAN LINGEMANN, formerly city assessor.

JOHN J. MCCARTHY, the former law director, was appointed city manager of Toledo, Ohio, succeeding Arnold V. Finch.

Danvers, Mass., has appointed DANIEL J. MCFADDEN, formerly parks and recreation superintendent to succeed Robert E. Layton as city manager.

The first manager of Opa-locka, Fla., is MAYNARD T. MCGURN, former manager of Tarpon Springs, Fla.

GLYNN MILLS, former administrative assistant at Lawrence, Kans., has been appointed city manager of Alamosa, Colo., succeeding Robert C. Storey.

Cherokee, Okla., has appointed JOHN MINKLER, formerly of research and budget at Kansas City, Mo., to succeed C. E. Fulkerson as city manager.

The first manager of Greenville, Texas, is HENRY B. NABERS, former city manager of Sweetwater, Texas.

ROBERT J. M. O'HARE, formerly executive secretary of the citizens league of Pawtucket, R. I., was appointed city manager of Stoughton, Mass., succeeding Donald H. Blatt.

Succeeding Donald S. Harding as city manager of Oakmont, Pa., is SINCLAIR POWELL, formerly of the manager staff at Cincinnati, Ohio.

Johnson City, Tenn., has appointed E. J. QUILLEN, formerly city recorder, to succeed L. Z. Dolan as city manager.

M. W. SLANKARD left the managership at Yuba City, Calif., to succeed Glenn Wade as city manager of Coronado, Calif.

Old Orchard Beach, Maine, has appointed a former management intern, NORRIS W. STILPHEN, as city manager succeeding John W. True.

The first manager of Ferguson, Mo., is ROBERT C. STOREY, formerly city manager of Alamosa, Colo.

M. W. THOMAS, formerly self-employed, was appointed city manager of Durango, Colo., succeeding Earnest D. Lindsay.

Pleasant Ridge, Mich., has appointed FREDERICK E. WEGNER, former manager of Roseville, Mich., to succeed A. J. Berst who has retired.

ALLEN L. WILCOX left the managership of Lisbon, Maine, to become the first city manager of Shrewsbury, Mass.

O. M. WISEMAN, a former school teacher, was appointed city manager of Ironton, Ohio, succeeding H. M. Stanley.

CLARENCE E. RIDLEY
Executive Director
International City Managers' Association

REPRESENTATIVE MUNICIPAL BOND ISSUES
July 1 to July 16, 1954

Date of Sale			*Purpose*	*Average Maturity (Years)*	*Net Interest Cost Per Cent*
7- 1-54	West Branch, Mich.	$180,000	Sewage Disposal	16⅝	3.309
7- 1-54	Richmond, Ind.	70,000	Fire Station	4½	1.47
7- 1-54	South Plainfield, N. J.	37,500	Improvement and Equipment	5¼	2.67
7- 6-54	Yorba Linda Sch. Dist., Calif.	53,000	Building	9½	2.79
7- 6-54	Dubuque, Iowa	225,000	Swimming Pool	10⅘	1.94
7- 6-54	Brook Park, Ohio	139,930	Water Improvement	6	2.29
7- 7-54	Marion Co., Ind.	300,000	Power Plant Construction and Facilities	5⅘	1.37
7- 7-54	Lynn, Mass.	100,000	Street and Sidewalk Paving	3	1.14
7- 7-54	Spartanburg, S. C.	135,000	Metropolitan Dist.	9½	1.99
7- 8-54	Warwick, Va.	140,000	General Improvement	2½	2.13
		510,000		12½	
7- 8-54	Maynard, Minn.	150,000	Sanitary Sewer and Disposal Plant	10¾	3.431
7- 9-54	Glocester, R. I.	155,000	School	8½	2.62
7- 9-54	West Terre Haute, Ind.	225,000	Water Works Refunding and Improvement	23½	3.47
7-12-54	Marvell, Ark.	147,000	Water Works and Sewer Rev.	15⅖	3.82
7-12-54	Manasquan, N. J.	30,000	Beach Improvement	5½	1.978
7-13-54	Largo, Fla.	75,000	Sewer Revenue Certificates	10¾	3.58
7-14-54	Billerica, Mass.	150,000	Water Mains	9	2.018
7-14-54	Lakewood, Ohio	45,000	Street Improvement	10½	1.40

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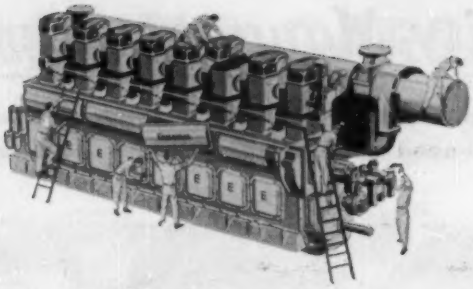

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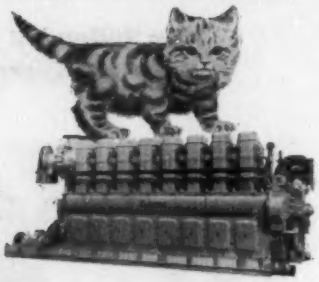

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Conventions—When and Where

Conventions listed this month for the first time are indicated by an asterisk (*)

Aug. 19-20—Fargo, N. D.
MID-CONTINENT PARKS AND RECREATION CONVENTION. For information address C. P. Reed, Superintendent of Parks and Recreation, Fargo Park District, Box 1796, Fargo.

Aug. 25-27—State College, Pa.
PENNSYLVANIA SEWAGE AND INDUSTRIAL WASTES ASSOCIATION. Annual Meeting (Pennsylvania State College). State College, Pa. Sec.-Treas., Bernard S. Bush, Kirby Health Center, Wilkes-Barre, Pa.

Aug. 29-Sept. 2—Windsor, Ontario
CANADIAN FEDERATION OF MAYORS AND MUNICIPALITIES. Annual Meeting (Prince Edward Hotel). Exec. Dir., George S. Mooney, Office M-16, Mount Royal Hotel, Montreal, Quebec, Canada.

Aug. 30-Sept 3—Atlantic City, N. J.
NATIONAL SHADE TREE CONFERENCE. Annual Meeting (Haddon Hall). Sec.-Treas., L. C. Chadwick, Department of Horticulture, Ohio State University, Columbus, Ohio.

Sept. 9-10—Montauk, L. I.
AMERICAN WATER WORKS ASSOCIATION—New York Section. Annual Fall Meeting (Montauk Manor). Sec.-Treas., Kimball Blanchard, 50 W. 50th St., New York 20.

Sept. 12-14—Williston, N. D.
LEAGUE OF NORTH DAKOTA MUNICIPALITIES. Annual Meeting (Plainsman Hotel). Exec. Sec., Roberta C. Burr, 504½ Main Ave., Bismarck, N. D.

Sept. 12-15—San Francisco, Calif.
NATIONAL INSTITUTE OF MUNICIPAL LAW OFFICERS. Annual Meeting (St. Francis Hotel). General Counsel, Charles S. Rhyne, 726 Jackson Pl. NW., Washington 6, D. C.

Sept. 12-16—Spokane, Wash.
NATIONAL CONFERENCE OF STATE PARKS. Traveling meeting beginning at Spokane and ending at Olympic Peninsula (Lake Crescent Lodge). Exec. Sec., Miss Harlean James, 901 Union Trust Bldg., Washington 5, D. C.

Sept. 13-15—Shawnee-on-Delaware, Pa.
GOVERNMENTAL RESEARCH ASSOCIATION. Annual Meeting (Shawnee Inn). Sec., Elsie V. Haas, 684 Park Ave., New York 21, N. Y.

Sept. 13-16—Atlantic City, N. J.
ILLUMINATING ENGINEERING SOCIETY. Annual Meeting (Chalfonte-Haddon Hall). Exec. Sec., A. D. Hinckley, 1860 Broadway, New York 23, N. Y.

Sept. 15-17—Grand Island, Nebr.
LEAGUE OF NEBRASKA MUNICIPALITIES. Annual Convention (Hotel Yancy). Exec. Sec.-Treas., C. E. Beal, 303 Continental Bldg., Lincoln, Nebr.

Sept. 15-17—Muskegon, Mich.
AMERICAN WATER WORKS ASSOCIATION—Michigan Section. Annual Meeting (Occidental Hotel). Sec., T. L. Vander Velde, State Department of Health, Lansing 4, Mich.

Sept. 16-18—Salt Lake City, Utah
UTAH MUNICIPAL LEAGUE. Annual Convention (Newhouse Hotel). Exec. Dir., Tom McCoy, Newhouse Hotel, Salt Lake City, Utah.

Sept. 19-21—Roanoke, Va.
LEAGUE OF VIRGINIA MUNICIPALITIES. Annual Convention (Hotel Roanoke). Exec. Sec., Harold I. Baumes, 905 Travelers Bldg., Richmond 19, Va.

Sept. 19-22—Atlantic City, N. J.
AMERICAN PUBLIC WORKS ASSOCIATION. Public Works Congress and Equipment Show (Hotel Claridge, Municipal Auditorium). Exec. Sec., D. F. Herrick, 1313 E. 60th St., Chicago 37, Ill.

***Sept. 19-25—Edinburgh, Scotland**
INTERNATIONAL CONGRESS FOR HOUSING AND TOWN PLANNING. Headquarters, International Federation for Housing and Town Planning, Paleistraat 5, The Hague, Netherlands.

Sept. 20-21—Kansas City, Kans.
LEAGUE OF KANSAS MUNICIPALITIES. Annual Meeting (Town House Hotel). Exec. Dir., John G. Stutz, 512 Capitol Federal Bldg., Topeka, Kans.

Sept. 20-22—Nashville, Tenn.
AMERICAN WATER WORKS ASSOCIATION—Kentucky–Tennessee Section. Annual Meeting (Andrew Jackson Hotel). Sec.-Treas., J. Wiley Finney, Jr., 420 Sixth Ave. N., Nashville, Tenn.

Sept. 21-23—Cumberland Falls State Park, Ky.
KENTUCKY MUNICIPAL LEAGUE. Annual Meeting (DuPont Lodge). Exec. Sec., Carl B. Wachs, McVey Hall, University of Kentucky, Lexington, Ky.

Sept. 21-23—Dayton, Ohio
AMERICAN WATER WORKS ASSOCIATION—Ohio Section. Annual Meeting (Hotel Biltmore). Sec.-Treas., M. E. Druley, 68 N. South St., Wilmington, Ohio.

Sept. 22-24—Atlanta, Ga.
GEORGIA WATER AND SEWAGE OPERATORS' SCHOOL. (Georgia Institute of Technology). Sec.-Treas., A. T. Storey, Georgia Water and Sewage Association, 1210 Hemphille Ave. NW., Atlanta, Ga.

Sept. 22-24—Detroit, Mich.
MICHIGAN MUNICIPAL LEAGUE. Annual Meeting (Statler Hotel). Exec. Dir., John H. Huss, 205 S. State St., Ann Arbor, Mich.

Sept. 23-24—Milwaukee, Wis.
LEAGUE OF WISCONSIN MUNICIPALITIES. Annual Meeting (Hotel Schroeder). Exec. Sec., Frederick N. McMillin, 30 E. Johnson St., Madison 3, Wis.

Sept. 23-25—Oklahoma City, Okla.
OKLAHOMA MUNICIPAL LEAGUE. Annual Meeting (Hotel Huckins). Exec. Dir., Daniel Fudge, P. O. Box 1214, Oklahoma City, Okla.

Sept. 26-28—Jefferson City, Mo.
MISSOURI WATER AND SEWAGE CONFERENCE. Annual Meeting (Governor Hotel). Sec.-Treas., W. A. Kramer, State Office Bldg., Jefferson City, Mo.

Sept. 26-28—Jefferson City, Mo.
AMERICAN WATER WORKS ASSOCIATION—Missouri Section. Annual Meeting (Hotel Governor). Sec.-Treas., W. A. Kramer, State Office Bldg., Jefferson City, Mo.

Sept. 26-29—Cincinnati, Ohio
NATIONAL ASSOCIATION OF ASSESSING OFFICERS. Annual Meeting (Netherland Plaza Hotel). Exec. Dir., Albert W. Noonan, 1313 E. 60th St., Chicago 37, Ill.

Sept. 26-30—New Orleans, La.
INTERNATIONAL ASSOCIATION OF CHIEFS OF POLICE. Annual Conference (Roosevelt Hotel). Exec. Sec., Edward J. Kelly, 1424 K St. NW., Washington 5, D. C.

Sept. 26-30—Philadelphia, Pa.
AMERICAN SOCIETY OF PLANNING OFFICIALS. Annual Meeting (Benjamin Franklin Hotel). Exec. Dir., Dennis O'Harrow, 1313 E. 60th St., Chicago 37, Ill.

Sept. 27-30—Kansas City, Mo.
INSTITUTE OF TRAFFIC ENGINEERS. Annual Meeting (Muehlebach Hotel). Exec. Sec., M. Mansfield Todd, Strathcona Hall, New Haven 11, Conn.

Sept. 27-30—Pittsburgh, Pa.
AMERICAN TRANSIT ASSOCIATION. Annual Meeting (William Penn Hotel). Gen. Sec., Arthur W. Baker, 292 Madison Ave., New York 17, N. Y.

Sept. 27-Oct. 1—Bretton Woods, N. H.
NATIONAL TAX ASSOCIATION. Annual Meeting (Mount Washington Hotel). Exec. Sec., Ronald B. Welch, NTA, P. O. Box 1799, Sacramento 8, Calif.

Sept. 27-Oct. 1—St. Louis, Mo.
NATIONAL RECREATION CONGRESS. Annual Meeting (Jefferson Hotel). Sec., T. E. Rivers, 315 4th Ave., New York 16, N. Y.

(*Continued on page* 191)

1954

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SEPTEMBER 19 - 22

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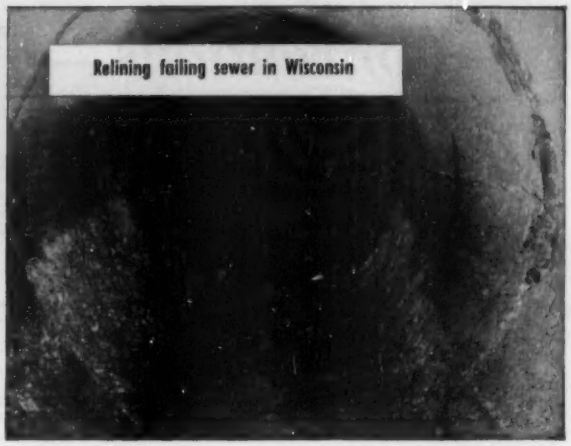
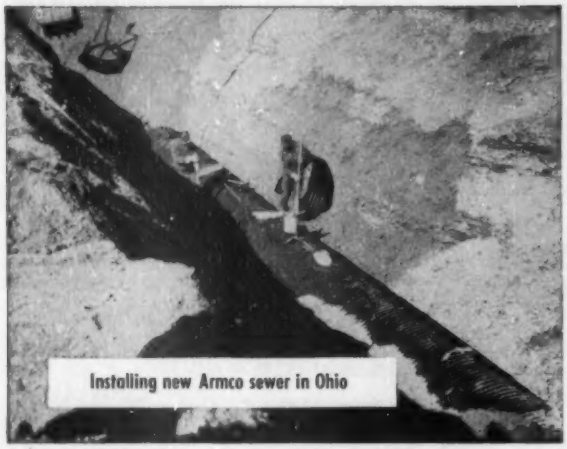
Threading cracked sewer in Georgia

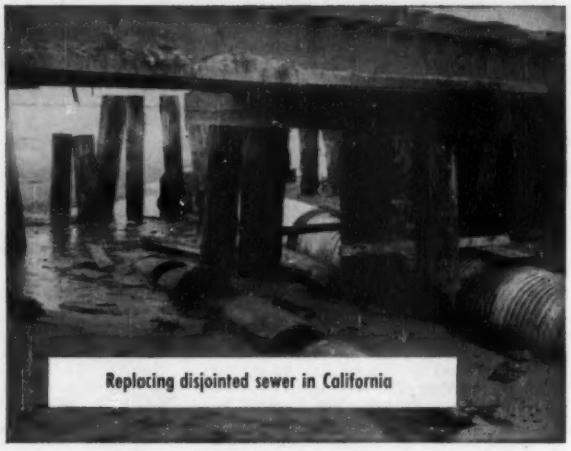


Relining failing sewer in Wisconsin

Which Armco sewer saved the most money?



Installing new Armco sewer in Ohio



Replacing disjointed sewer in California

Was it relining the failing sewer; threading the cracked pipe; replacing the disjointed structure; or installing an Armco Sewer in a brand-new installation? Fact is, they *all* saved plenty of money. But considering original costs, the *new* Armco Sewer will save much more through the years.

The new Armco Pipe will be faced with the same hazards that were disastrous to the other structures. But because of the flexible strength of corrugated metal, there is no danger of cracking. Positive bolted connections eliminate disjointing. And with Armco ASBESTOS-BONDED Pipe, the corrosive sewage will not cause damage. A long life for the new Armco Sewer is assured.

No two sewer problems are alike. But Armco can supply a structure to solve practically all of them. Armco Corrugated Metal Pipe and Pipe-Arch are recommended for normal sewer use; ASBESTOS-BONDED Pipe and Pipe-Arch for severe corrosion problems; MULTI-PLATE Pipe, Arch and Pipe-Arch for large area requirements. For sizes and other factual details, write us. Armco Drainage & Metal Products, Inc., 1394 Curtis Street, Middletown, Ohio. Subsidiary of Armco Steel Corporation. In Canada: Write Guelph, Ontario. Export: The Armco International Corporation.

Armco Sewer Structures

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Municipal & Civic Publications

Water Conditioning Data Book

No. 2478A. Compiled by The Permutit Company, 330 West 42nd St., New York 36, N. Y. 1953. 108 pp.

A new edition of the Permutit pocket-sized, hard-covered, reference volume which supersedes the 1952 edition. The 78 chapters and tables cover subjects of value to the engineer: hydraulics; impurities in water; chemical conversions; coagulant, acid and alkali dosages; chemicals used in water treatment; water-treatment processes; boiler feed make-up requirements, alkalinity relationships, alkalinity relations, specific gravities, chemical reactions, hydraulic conversion factors, etc.

The New Tree Experts' Manual

By Richard R. Fenska. De La Mare Garden Books, 448 W. 37th St., New York 18, N. Y. 1954. 238 pp. $5.

The facts, figures and directions on the care of shade and ornamental trees published in this manual will make it of value to landscape architects, city foresters, municipal officials, tree wardens, homeowners, etc.

Beginning with a description of the parts of a tree and their functions, the book goes on to give details on watering, soils, transplanting, pruning, bracing and cabling, tree-wound dressing, surgery, spraying, and nourishing. A mixing chart, showing materials which may be used in one solution, and a chapter on shade-tree laws are special features of the book.

See the article by Richard R. Fenska on pages 110 and 111 of this issue.

American Democracy in Theory and Practice: State and Local Government

By Joseph E. McLean. Rinehart & Company, Inc., 232 Madison Ave., New York 16, N. Y. 1953. 192 pp. $1.85 when sold alone; 50 cents when sold with text: American Democracy in Theory and Practice: The National Government, by Robert K. Carr, Donald H. Morrison, Marver H. Bernstein and Richard C. Snyder.

Here is an interesting book that concerns itself with the relationships of state and local governments. The coverage of the subject matter is comprehensive and is aimed at pointing up the issues involved in obtaining an effective cooperation among the various levels of state and local (and also federal) administrations without sacrificing the integrity and responsibility of these individual levels. The book is also intended to serve as a supplement to the text, "American Democracy in Theory and Practice: The National Government." The volume should appeal to local administrators, students and others who are following present efforts to re-examine the relationships of our American governmental system.

Chapter headings in the book are: The American System of State and Local Government, The Structural and Legal Framework, The Political Framework, The Administrative Framework, Services and Activities, The Financial Framework, and Intergovernmental Relations.

The Law of Revenue Bonds

By Lawrence E. Chermak. Report No. 142. National Institute of Municipal Law Officers, 726 Jackson Place, NW., Washington 6, D. C. 1954. 236 pp. $5.

The great increase in the use of revenue bonds to finance municipal and state public projects since the end of World War II makes this a timely and useful book. In 1953 alone, more than $5,000,000,000 of public debt was created, and more than one-fourth of this amount was represented by revenue bonds.

The Introduction covers the history and methods of bond financing and discusses the functions of a bond counsel and the transcript of bond proceedings. Other chapters are as follows: Units of Government Issuing Revenue Bonds; Local Government Limitations; Power to Issue Revenue Bonds; Purposes for which Revenue Bonds Are Issued; Security; Authorization of Bond Issue; Content of Revenue Bonds; Construction of Revenue Funds; Rate Resolution and Rate Covenants; Redemption of Bonds; Sale, Award and Distribution of Bonds; and Conclusion.

Controlling City Government Expenditures

Management Information Service. International City Managers' Association, 1313 E. 60th St., Chicago 37, Ill. May 1954. Available only to subscribers to the Service.

This report outlines the principal means of controlling and measuring municipal governmental expenditures. The importance of establishing standards in order to judge the performance of individual employees and work crews is stressed. The report also cites the need for reviewing work methods periodically, to determine whether simpler procedures can be devised.

Frequent departmental reports covering expenditures and progress are also recommended as means of controlling the total costs of managing a municipality. Up-to-date methods of budgeting, accounting, purchasing, debt control, personnel control, and in-service training are discussed. Numerous references are made throughout the report to other articles, reports, and publications on government expenditure control and related topics.

Progress Report on "Rehabilitation" and "Conservation"

Planning Advisory Service Report No. 61. American Society of Planning Officials, 1313 E. 60th St., Chicago 37, Ill. April 1954. 21 pp. Available to subscribers for Service.

Answers from large cities to ASPO's inquiry on what progress had been made in "rehabilitation," "conservation," and "urban redevelopment" showed that the term "conservation" meant different things in different places. The meaning of "redevelopment" depended in each case upon the definition given to it by the state enabling statute. There was wider agreement about the meaning of "rehabilitation." This report is mainly devoted to defining the terms from various aspects.

Recreation in the American Community

By Howard G. Danford. Harper & Brothers, 49 East 33rd St., New York 16, N. Y. 1953. 464 pp. $5.

This new and worthwhile book deals with the practical problems of organizing and administering public recreation programs. The author, former Director of Recreation for Madison, Wis., and present Professor of Physical Education at the Florida State University, relates the principles and values of organized recreation activities to the needs of our urbanized and industrial American democracy.

The book is divided into four parts. Part One, titled, *Recreation in Action* contains chapters on: Design for Living, and Town and Country. Part Two is called *Principles of Operation* and deals with Principles of Administration, Values in Recreation, The Operation of Playgrounds, Community Centers, Competitive Sports in Recreation, and Community-Wide Activities and Services. Part Three, titled, *Common Problems*, is divided into these chapters: Organizing for Community Action, Public Relations for Recreation, Laws and Liability, Safety in Recreation, and Budget and Finance. Part Four deals with *Recreation and the Future.*

Reduction of Vulnerability in The Milwaukee Area

By Oscar Sutermeister. Submitted to City of Milwaukee Civil Defense Administration (8814 West Lisbon Ave., Milwaukee 16, Wis.) and Milwaukee Metropolitan Civil Defense Commission. May 17, 1954. 73 pp.

This exploratory study is designed to assist planners and legislators in immediate and long-term planning for the reduction of urban vulnerability. The major recommendations of the report are all aimed at action by the state legislature, in the form of passage of acts and amendments to the statutes, as urban defense zoning and building acts, dispersed development district act, bonding for provision of auxiliary water supply, etc.

The Community Builder's Handbook

Prepared and Published by the Community Builders' Council of the Urban Land Institute, 1737 K Street, N.W., Washington 6, D. C. 1954. 300 pp. $12.

The Handbook, now in its revised and enlarged 4th edition, covers the broad subject of planning, financing and building better neighborhoods, based on the experience of builders who have constructed outstanding residential communities in this country.

The book is divided into two sections—one on residential development and the other on the planning of shopping centers. The former section has been expanded to include up-to-date information on site selection, analysis of market conditions, and subdivision design; while the section on shopping centers has been completely rewritten to include experience gained from the scores of new centers built since 1950.

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A complete Report on the 1954 Businessmen's Conference on Urban Problems, San Diego, Calif. Chamber of Commerce of the United States. Washington 6, D. C. 149 pp. $1.

The principal problems covered in this record of the two-day national Businessmen's Conference on Urban Problems held earlier this year are: overcrowded streets, urban renewal, city planning, industrial development and off-street parking. Included are the addresses of 21 national authorities on these subjects, plus a record of the extensive question-answer discussion periods. Some of the topics of the addresses are: Cities and Their Tax Problems, The Price Tag of Congestion, The Businessman's Stake in City Planning, Off-Street Parking and Retail Sales, and Financing Municipal Parking.

Zoning for the Planned Community

By Fred W. Tuemmler in Urban Land, Volume Thirteen, Number Four, April, 1954. Published by Urban Land Institute, 1737 K St., N.W., Washington 6, D. C.

Mr. Tuemmler's article discusses and analyzes the types of zoning-ordinance controls which permit the development of large tracts of land as a complete neighborhood unit having a range of dwelling types, necessary local shopping facilities, parks, playgrounds, school sites, and other community facilities. Such ordinance provisions applying in Prince George's County, Md., San Francisco, Alexandria, Va., and Pittsburgh, are discussed. Specific plans for such communities are presented in a detailed coverage of the experience of Prince George's County, Md., in applying such an ordinance. The actual regulations in effect in this county are also presented. The proposed regulations for San Francisco similarly accompany the article.

Regional Analysis—Trenton-Camden Metropolitan Area

A study of the Economic Factors Affecting Development in New Jersey Along the Delaware River. By the New Jersey State Department of Conservation and Economic Development with the Bureau of Urban Research, Princeton University. Copies may be obtained from Department of Conservation and Economic Development, 520 E. State St., Trenton, N. J. $3.

In response to the rapid industrial and population developments taking place in the Delaware River valley near Philadelphia, the New Jersey State Department of Conservation and Economic Development has prepared a detailed analysis of the physical, social and economic conditions in the portions of New Jersey likely to be affected by the rapid changes taking place.

The report has been prepared in conjunction with the Bureau of Urban Research of Princeton University. Extensive tables, charts, and maps present data on the following subjects: Land Use, Population, Housing, Economy, Transportation, Utilities and Services, and Government. Major planning implications are derived from the maps and tables and are discussed in the text of the report.

Management in the Public Service

By John D. Millett. McGraw-Hill Company, New York, N. Y. 1954. 417 pp. $5.50.

This is an important contribution to the study of the process of management of public agencies. Executive officers in governmental organizations and students of government particularly will find this volume of interest. Dividing the subject matter of public administration into two broad categories, that of the "politics of public administration" and that of management, Mr. Millett devotes this volume to a study of the management aspects. A second proposed volume will take up the subject of the politics of public administration.

The book is divided into three main parts. The first deals with "The Common Problems of Work Direction" and contains chapters on Leadership, Planning, Communication, Supervision and Public Relations. Part Two discusses "The Common Problems of Work Operation" and has chapters on Organization as a Technical Problem, The Human Relations of Organization, Budget Preparation, Fiscal Control, Management Improvement, Essentials of Personnel Policy, Techniques of Personnel Management and Legal Service. The third part, titled "The Common Problems of Internal Services," discusses the internal servicing of public offices dealing with capital plant and supplies.

In discussing his subject, Mr. Millett illustrates his points with experiences and observations gained from his broad service with public administrative agencies.

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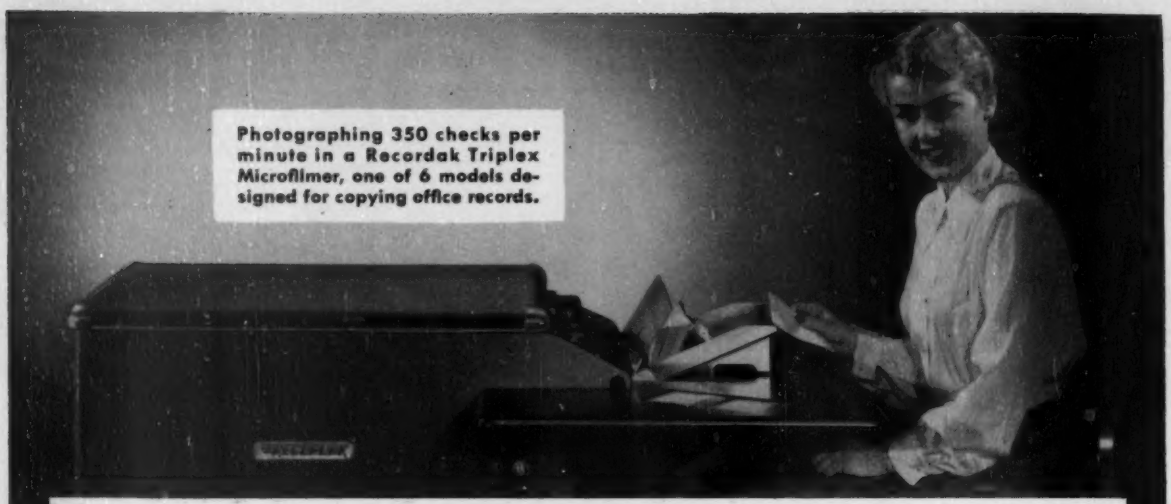

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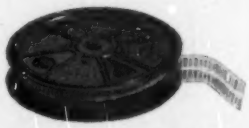

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Handbook of Graphic Presentation

By Calvin F. Schmid. The Ronald Press Company, 15 East 26th St., New York 10, N. Y. 1954. 316 pp. $6.

This book explains the best methods for communicating technical information graphically, so that it may be grasped readily by the nonspecialist. Basic types of statistical charts are described and explained. Particular reference is made to the advantages and disadvantages of different types of charts for presenting different kinds of data. There are instructions for laying out charts and helpful pointers on how to avoid difficulties in construction. The various procedures are illustrated with graphs and charts taken from many fields.

Model Traffic Ordinance

Issued by Department of Commerce, Bureau of Public Roads. Obtainable from Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C. 1953. 41 pp. 20 cents.

Since non-uniform laws are inconvenient and hazardous to motorist and pedestrian alike, it is advisable that any municipality adopting or changing its traffic ordinance make it as much as possible like other carefully prepared ordinances. As the foreword to this revised model points out, the provisions are intended to be merely a recommended guide to municipalities, with omissions or modifications necessitated in states having laws not fully in accord with the Uniform Vehicle Code or where constitutional or statutory enactments may make complete acceptance impracticable.

What Communities Can Do For the Aging

One of the "workshop" series on working with older people, published in the May 1954 issue of Adult Leadership, *743 N. Wabash Ave., Chicago 11, Ill. 20 pp. 50 cents.*

Recognizing the major challenge to our society in the ever-growing number of older people, *Adult Education* devoted much of its May issue to articles on how society can best serve its elderly citizens and how they, in turn, can serve society.

Various authorities in the field of gerontology have contributed articles on such aspects as defining the problem, putting talents of elderly people to work, what communities can do, what Grand Rapids has learned about the aging, and where leaders for older people can be found and trained. Under "Resources" are listed books, pamphlets, articles and periodicals, dramas, films, courses and conferences on the subject.

Roadsides: Their Use and Protection

Highway Research Board. Special Report No. 17. Published by the National Research Council, National Academy of Sciences (Publication 290), 2101 Constitution Ave., Washington 25, D. C. 1954. 48 pp. 75 cents.

This is the published report of the material presented at the symposium of the 32nd annual meeting of the Highway Research Board, held early in 1953. The contents include discussions of the highway designer's, planner's, and traffic engineer's viewpoints, the motorist and the public; protection of roadside beauty, and a summary of panel and audience discussion. Among the appendices is a detailed account of the highlights from a survey of 246 motorists in 20 states.

Steps to Cooperative Housing

Cooperative League of the U. S. A., 343 S. Dearborn St., Chicago 4, Ill. 12 pp.

This is an interesting and easy to read booklet that answers many questions about cooperative housing, and about the methods of organizing a cooperative. The booklet is divided into three sections. Section One outlines some of the housing problems faced by Americans today, defines cooperative housing, and describes ways in which it has been used. Section Two tells of the advantages of co-op housing and also cautions on some of the pitfalls that may be encountered in organizing a cooperative. Section Three tells of several ways to use cooperative methods in housing, steps to follow, help that can be enlisted, and organizational and operational methods. Model by-laws for various types of cooperative and mutual associations are available from the Cooperative League on request.

Regulating Subdivisions

The Control of Plats, Subdivisions, or Dedications. By Floyd M. Jennings and Ernest H. Campbell. Information Bulletin No. 167. Published by the Association of Washington Cities in cooperation with the Bureau of Governmental Services, University of Washington, Seattle 5, Wash. May 14, 1954.

This latest publication of the Association of Washington Cities presents detailed information on the preparation and enactment of subdivision regulations. While aimed primarily for the cities and towns in Washington, the procedures and other information presented will be of interest to persons concerned with subdivision control in other areas of the country.

Part One of the study discusses such topics as purposes of a subdivision ordinance, administrative problems in dealing with subdivision control, and steps in preparing and adopting a subdivision ordinance.

Part Two presents a draft of a proposed subdivision ordinance.

Civic Education in The United States

A Directory of Organizations. Compiled by Robert Horwitz and Carl Tjerandsen. The *University of Chicago Committee on Education for American Citizenship, Chicago, Ill. 1954. 238 pp. $3.*

The organizations—name, address, membership, financial support, personnel, and program—are classified first by age group (school age, college age, or adult) and then by the functional definition of their areas within the field of civic education.

Under the category of Americanization are listed those organizations offering instruction or aid to aliens or immigrants. Under Political Democracy are those which aim to preserve and strengthen democratic political institutions and practices.

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City Region and Regionalism

By Robert E. Dickinson. Grove Press, 795 Broadway, New York 3, N. Y. 1954. 327 pp. $5.

This is a reprinting of the book of the same title first published in 1947. The book falls into four parts: (1) the functions and distribution of towns as regional centers, (2) the physical and economic structure of large urban clusters, (3) the regional functions and limits of the large city and the character and extent of its outlying areas, (4) the idea of the region as a major division of the state. Examples of regions are drawn mainly from the United States, Germany, and France, where much work in describing and defining regions has been done during the past 20 years.

Social Characteristics of Cambridge Neighborhoods

By Cambridge Planning Board in collaboration with Cambridge Social Agency Executives. Cambridge, Mass. 1953.

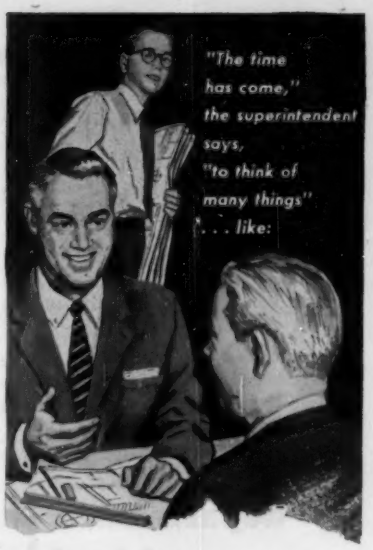
This report is a working manual of social statistics for the City of Cambridge. It is supplementary to "Thirteen Neighborhoods: One City, An Analysis of Residential Areas," a report previously issued by the Cambridge Planning Board. This latest report is intended as an added guide for use in the development of neighborhood groups. Such work, it is reported in the study, has already been started in a number of Cambridge areas. The data presented in map and tabular form cover such subjects as juvenile problems, welfare services, housing characteristics, population characteristics, and education and health characteristics. No attempt has been made to evaluate the meaning behind the facts presented.

Housing . . . U. S. A.— As Industry Leaders See It

Edited by W. P. "Bill" Atkinson, David D. Bohannon, Milton J. Brock, Alan E. Brockbank, Fritz B. Burns, Edward R. Carr, Thomas P. Coogan, Harry J. Durbin, Robert P. Gerholz, Rodney M. Lockwood, Joseph E. Merrion, Joseph Meyerhoff, George F. Nixon, Emanuel M. Spiegel. Simmons-Boardman Publishing Corp., 30 Church St., New York 7, N. Y. 1954. 237 *pp.* $5.

Housing . . . U. S. A. presents the merchant builder's approach to the problem of housing in the United States. The book contains the story of the home building industry with 22 informative chapters edited by a 14-man group composed of some of America's most successful large-scale house builders. Subjects treated include mortgage credit, the U. S. housing inventory and production capacity, builder research, public relations and merchandizing programs, values of home-ownership, urban redevelopment, city blight and the slum problem. Also discussed are the following: the federal housing agencies and the government's role in housing, cooperative and low-cost housing, public housing programs, building codes, housing and manpower in national emergencies, inflation, taxes, and housing in Europe.

(*Continued on page* 185)



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Forty-Fifth Annual Conference of New York Mayors

OVER 700 OFFICIALS and guests attended the 45th Annual Meeting of the New York State Conference of Mayors and other Municipal Officials, held in Monticello, N. Y., June 16-18. The retiring president of the Conference, Mayor Edwin G. Michaelian of White Plains, announced the election of the following new officers for the coming year:

President: Mayor Stowell P. Fournia, Messena
First Vice-President: Mayor James J. Crowley, Salamanca
Second Vice-President: Mayor Donald E. Stocum, Johnson City
Treasurer: Mayor Erastus Corning II, Albany.

Problems ranging from accounting to zoning were discussed in the more than 40 separate sessions of the meeting. In a number of resolutions adopted, the mayors revealed some of the topics where they felt state or federal cooperation was needed or was considered desirable.

Tort liability—the kind of liability a municipality must face if a resident is injured when tripping on a faulty sidewalk or other municipal property—was examined exhaustively. In general, the officials attending the conference felt that at the present time local governments are too vulnerable to tort cases.

One official cited an instance where a resident had tripped on a sidewalk, was slightly injured, did not report the accident to either the police or other officials, and finally entered suit against the village involved on the last day of the legal period in which such cases must be started. The village was in a most vulnerable position in not having been able to make an investigation of the accident at the time it happened and was thus at a distinct disadvantage.

The mayors resolved to support the work of a new Legislative Committee set up to investigate the need for protecting municipalities in tort cases.

Home Rule

Home Rule was the subject of a resolution which requested that local legislative powers be extended to villages having populations of less than 5,000.

Intergovernmental relationships were discussed, and the conference pledged to support a special commission created by the state to solve the thorny legal and financial problems that frequently occur between towns and villages.

Municipal purchasing was the subject of a resolution in which the mayors petitioned the Governor and Legislature to support proposals that would make local purchasing more flexible.

Highway Aid Asked

Increased street and highway aid from both the state and federal governments was urged by the conference.

A coordinated financial program, involving local, state, and federal governments, that will insure the abatement of stream pollution was also urged.

Finally, the mayors reaffirmed their opposition in the taxation of interest on municipal bonds. To this end they requested the New York State Representatives in Congress to combat such taxation in whatever form it might be presented.

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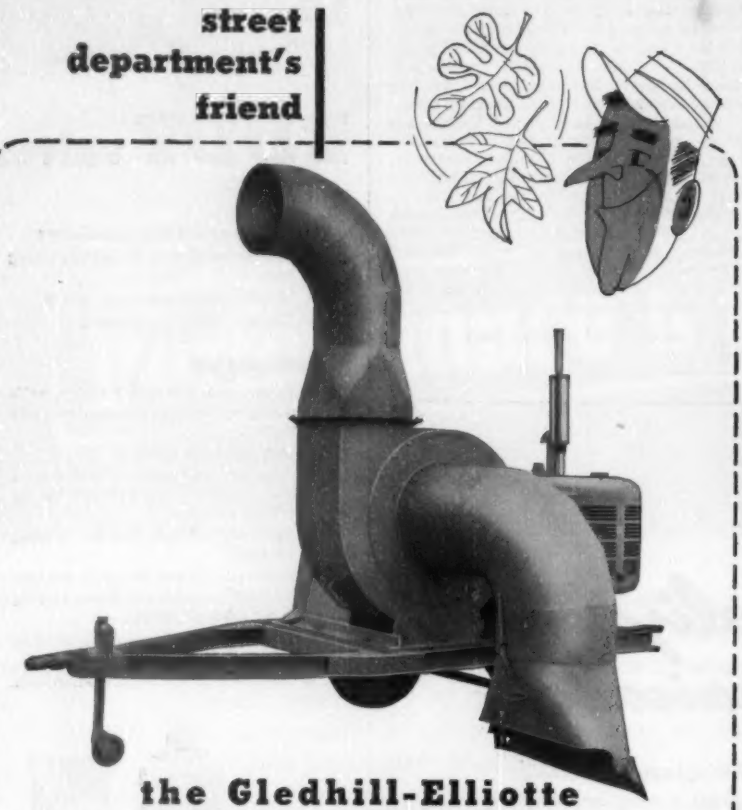

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Baltimore Codes Committee to Reconcile Local Building Regulations

A "Codes Committee" of experts from the City of Baltimore's Health, Planning, and Public Works departments has recently been set up to reconcile all conflicts among that city's building, mechanical, electrical, and fire-prevention codes, its zoning and hygiene and housing ordinances, and other regulations that relate to housing and building. Experience gained thus far in Baltimore's famous neighborhood-wide antislum enforcement program has shown that this is the next step that must be taken to make the plan more effective.

In announcing the formation of the Committee, C. William Brooks, Chairman, said that in the 27-block area where the Baltimore Plan was first tried out, "it was found that many of the provisions of the various codes, ordinances, and regulations conflicted, although each purported to deal with the same subject matter.

Mr. Brooks also said that the overall aim of the Committee will be "to facilitate and strengthen the administration and enforcement of such codes, ordinances, and regulations and to eliminate the uncertainty of property owners and managers with respect to the application of such codes, ordinances, and regulations to their properties."

In addition to Mr. Brooks, other members of the Committee are: John M. Russell, author of the present Baltimore building and fire prevention codes; Milton W. Ford, Chief Building Inspector; Franz Vidor, Director of the Housing Bureau of the Health Department; and Dr. H. Wilmer Shultz, Director of the Sanitary Section of the Health Department.

Checklist is Aid to Officials Developing Industry and Community Trade

MUNICIPAL and Chamber of Commerce officials interested in developing industry and trade in their communities will find help in a recent 5-cent leaflet of the U. S. Department of Commerce titled *Community and Area Development Checklist.*

The checklist, which was prepared by Victor Roterus and Gustav E. Larson, both of whom are experts in community economic development, sets forth the suggested actions that communities can take, tells what state organizations can do to help, and explains the kinds of technical assistance obtainable from the Area Development Division, U. S. Department of Commerce.

The following list of actions is recommended as part of the local government's contribution to a community economic development program:

1. Review tax system and public utility services to assure that they do not discourage industrial and business development.

2. Plan and provide adequate schools, recreational facilities, transportation services, hospitals, utility services, police and fire protection.

3. Make forward-looking capital improvement budgets on the basis of the above which can be accelerated in times of local unemployment.

4. Institute, if necessary, vocational guidance and training programs in cooperation with school system and local state employment security office, develop apprenticeship training programs, and provide training opportunities for handicapped.

5. Participate in local area development programs by providing facts on community and by cooperating on studies which are beyond the scope of development committee.

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THIRD PAK-MOR *now replacing 3-year-old compactor.*

Just one of many sales made by Truck Equipment Corp., Richmond, Va., Telephone 82-2417, Harold L. Cole, President, Pak-Mor Distributors for:

North Carolina, Virginia, West Virginia, Maryland, Delaware, Pennsylvania, New Jersey, New York, Connecticut, Massachusetts, Rhode Island, Vermont, New Hampshire, Maine, District of Columbia with agents as listed below:

NEW YORK CITY
Vaniman International, Inc.
Empire State Bldg.
New York, N. Y.
CHickering 4-4171

UPSTATE NEW YORK
Howard Weber
Truck Equipment Co., Inc.
Buffalo, N. Y.
HUmbolt 6780

NEW JERSEY
United Motor Sales
914 Spring St.
Elizabeth, N. J.
ELizabeth 3-5555

NEW ENGLAND
Harry M. Blake
47 Standish Road
Watertown, Mass.
WA. 4-7839

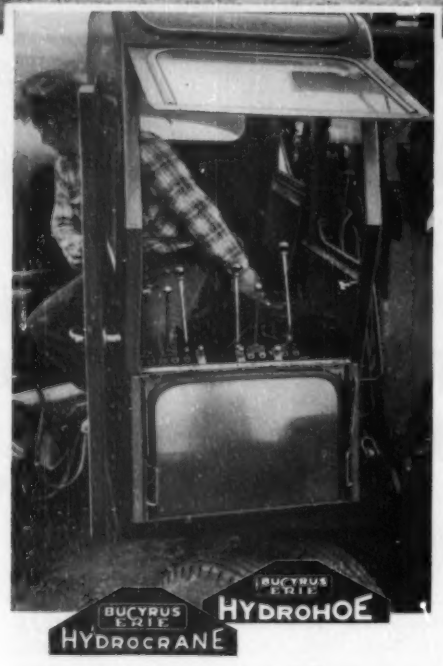
★ Write for Free Illustrated Booklet on PAK-MOR Refuse Collection Units

PAK-MOR MANUFACTURING CO.

P. O. Box 6147, Loop 13 and Roosevelt Ave., San Antonio, Tex.

Now!

Remote Control for the Hydrocrane Hydrohoe



Get the facts first hand. Drive the new remote control Hydrocrane-Hydrohoe yourself. Arrange an appointment with your Bucyrus-Erie distributor.

BUCYRUS-ERIE COMPANY
South Milwaukee, Wisconsin

You Can Drive It Right from the Crane Cab

Here's another new Hydrocrane-Hydrohoe feature for '54 — remote control. With this outstanding advantage, you can start the truck engine, drive the crane or hoe ahead, reverse it, steer it, brake it, stop it — without even moving out of the crane operating cab. In addition the truck is provided with air brakes.

Think of the time you save on move-ups with this outstanding new feature. No need to leave the operator's station and get behind the truck wheel just to move the machine up a few feet. With remote control, the Hydrocrane operator can keep full command of both truck and load at all times; Hydrohoe operator can add extra trench footage with the time saved. You don't need another man to drive the truck.

SYSTEM EXTREMELY SIMPLE

. . . has three basic parts — air supply system, control valves, and actuating cylinders. Air from truck brake compressor is delivered to storage tanks, then to crane operating cab. Fingertip levers operate valves directing air through piping to actuating cylinders for truck clutch, brake, gear shift, and steering arm. Truck engine controls, located in crane cab, include ignition switch, starter button, and hydraulically controlled throttle. 22H54

Wanted: A Realistic Public Works Policy

By M. W. WATSON, *Chairman*
Construction and Civic Development Department Committee
Chamber of Commerce of the United States

THE PURPOSE of public construction is to provide facilities, not otherwise obtainable, that are needed by the country for the training of its citizens, the care of their health, and the facilitating of their business. The need for public construction is determined not by the unemployment statistics or the Federal Reserve Board index of industrial production but by population growth, the expansion of industry, and rising standards of living.

Unless public works are provided as needs for them arise, the growth and expansion of the private economy may be held back. . . .

New schools and hospitals are needed now; and unless they are built now, the quality of our citizenry will suffer. New highways are needed now, if we are not to slow down the automotive industry and impede the flow of commerce. Streets, sewerage and water systems must be extended now or our residential building activity will falter and industrial expansion may be impaired. These are practical considerations, which should not be obscured by theoretical discussion. . . .

Facing the Policy Questions

The unmet needs for public construction promise strong economic supports and incentives during the years ahead. In order to fulfill that promise, however, the projects must be paid for; and, irrespective of anticipated benefits, the paying process is likely to be a painful one to an economy already heavily burdened with taxation.

The problem is greatly aggravated by the complex structure of taxing authorities, federal, state, and local, which must handle the financing problem. Currently, after taking into account not only direct federal construction but also federal grants for highways, hospitals, schools, and airports, state and local governing bodies still carry almost three fifths of the public construction load. . . .

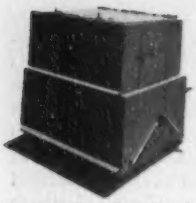
Financing will be a problem. Stated baldly, it is one of how to be able to afford what we cannot afford to do without. Under present circumstances, this is obviously not an easy problem to solve. Nevertheless, in order to assure the health and growth of our economy, a solution must be found. . . .

Irrespective of the state of the economy, public construction expenditures much greater than anything previously known must be contemplated. If these outlays are piled on top of already swollen governmental budgets, the needed projects will be obtained only by excessive taxation or inflation.

Therefore, vigorous effort must be made to produce corresponding savings by increasing governmental efficiency and otherwise reducing expenditures. This may mean some hard choices, since, in order to make the substantial savings needed to provide for increased construction activity, less dynamic governmental activities will have to be cut back or eliminated.

Since the bulk of public construction is, and should be, carried out by nonfederal bodies, it is essential that the financial capacity of state and local government be strengthened.

Patch
ROADS THE LOW COST WAY
Temperature Easily Controlled
•
Easy to Transport
•
Saves Money on Patchwork
STANDARD STEEL TAR-KETTLES
PATCH AND MOVE ON IN MINUTES AND SECONDS
With this Standard Steel Model "S" Kettle, "cold spots" or "burnt materials" are eliminated. You get uniformity of heat throughout the entire mass of material. Steady temperature at the correct level is maintained all day long. Easily transported — equipped with special safety features — it's a fast worker. With a motor spray attachment, it is even more efficient for road maintenance. Standard Steel also offers a complete line of crack filling pots, shoulder rollers and other road maintenance equipment.
WRITE FOR CATALOG AND PRICES
OTHER PRODUCTS OF STANDARD STEEL
Asphalt Pressure Distributors, Maintenance Distributors, Patch Rollers, Supply Tanks, Tool Heaters, Asphalt Tools, Street Flushers, Construction Brooms.
Built to the Highest Standard
TK-1
Standard Steel Works NORTH KANSAS CITY, MO.

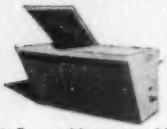


Universal Type Container is available in 4 to 12 cu. yd. capacities with or without top lids.

Apartment Type is available in 4 to 10 cu. yd. capacities. Note Sump Bottom, also available in Universal, Standard Drop Bottom and Drop Bottom Pressed Steel Type containers, for handling moist rubbish.

Drop Bottom Pressed Steel is available in 5 to 10 cu. yd. capacities without or with top lids.

Standard Drop Bottom, available in 2 to 10 cu. yd. capacities, is ideal for many materials handling uses.



Tilt Type, with two top lids, is available in 2 to 7½ cu. yd. capacities.

Multi-Karry Container comprises a master 6 cu. yd. container with three 2 cu. yd. box-like containers on casters. Each of the 2 cu. yd. containers may be rolled to a trash accumulation point. When loaded they are returned to master container and all three taken to dump and emptied by truck-mounted Dempster-Dumpster.

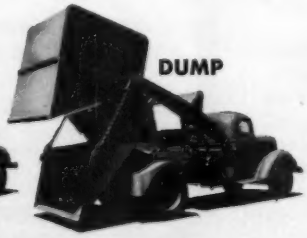
You will Dump High Costs, too

. . . when you install the Dempster-Dumpster System of Trash and Rubbish Collection

Cities over the nation have learned to eliminate the costly and inefficient method of handling trash and rubbish with conventional trucks, drivers and loading crews. You can equip one truck with a hydraulically operated Dempster-Dumpster. This truck-mounted Dempster-Dumpster, with only one man, the driver, serves scores of detachable Dempster-Dumpster Containers, as shown below. These containers replace unsanitary and unsightly trash cans, barrels, crates, etc. at such places as hotels, schools, hospitals, restaurants, department and grocery stores, market and housing areas, etc. Each is loaded by the user. By pre-arranged schedule your truck-mounted Dempster-Dumpster picks up, hauls and dumps each container—one after another.

We show at left a few of the popular designs being used. One Dempster-Dumpster handles them all, regardless of design or size. Containers built for handling trash and rubbish have doors or lids, permitting contents to be sealed up and eliminating rats, flies and the scattering of refuse by winds and scavengers.

You eliminate trucks standing idle. You eliminate re-handling of trash and rubbish. You eliminate loading crews. You increase efficiency, sanitation and city-wide cleanliness with this Dempster-Dumpster System —the lowest cost method of trash and rubbish collection ever devised. Write to us for complete information. Manufactured exclusively by Dempster Brothers, Inc.



THE DEMPSTER DUMPSTER SYSTEM

DEMPSTER BROTHERS, 884 Dempster Bldg., Knoxville 17, Tennessee

Because of the magnitude of the operation and the necessity for careful scheduling and maximum economy, state and local government should maintain plans and budgets for public improvements for periods of at least five years ahead.

Excerpts from the National Chamber's *Construction Markets* Bulletin for June, 1954.

New Forms of Local Government in Three New Jersey Municipalities

THREE New Jersey municipalities—including Newark, the state's largest city—have begun operating under more modern forms of local government. On July 1, Newark relinquished the title of largest remaining city in the United States operating under the commission form of government and changed to the "strong mayor-council" form adopted by its citizens on November 3, 1953.

Under this charter, the mayor is elected by all the people together with a council of nine members. The mayor will be assisted in governing the city by a business administrator whom he chooses with the advice and consent of the council.

The townships of Parsippany-Troy Hills and Mount Holly, which also made their changes on July 1, have switched to council manager forms of government. Five-man councils have been elected in each township, and administrative duties are being turned over to professionally trained administrators.

The three New Jersey municipalities have made their governmental changes under the provisions of the state's Optional Municipal Charter Laws of 1950. At least 10 other New Jersey communities have started official action leading to a choice of a new charter, according to the New Jersey Taxpayers Association.

A New Patriotic Service

To the Editor of THE AMERICAN CITY:

We Americans do not display our Flag as we should, and too often the emblem that flies is not clean and presentable. The Gateway Cleaners of Chicago now have a large illuminated sign in front of their place which tells all—

DISPLAY THE FLAG
WE WILL CLEAN IT FREE

Let us hope that every laundry and cleaner in the U.S.A. will follow this fine example and stimulate the display of OLD GLORY—and more than that, that all the flags which will fly will be spick and span, laundry clean!

SIDNEY A. TELLER
Hotel Windermere,
Chicago, Ill.

A SCHRAMM
Pneumatractor
WILL
PUSH • PULL • POWER
PROVIDE AIR

Dual tires as shown recommended only when flotation is required.

It will PUSH front end loader with bucket (illustrated), or angle dozer blade, rotary sweeper, snow plows, etc., . . . PULL anything a wheel tractor will, with either front or rear winch . . . POWER any hydraulically, mechanically and pneumatically operated equipment such as back hoe (illustrated), post hole digger, scaffold boom, etc., . . . PROVIDE AIR for any pneumatic tools that can be operated from a 125 C.F.M. AIR COMPRESSOR.

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SCHRAMM, INC.
The Compressor People • WEST CHESTER • PENNSYLVANIA

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BE ON THE CONSTANT ALERT
All Departments Can Now Listen to Every Vital Message

MONITORADIO for a thoroughly coordinated 2-way communication system.

Now every member of every department can have radio communication for as little as $49.95

Write today for further information.

- Nation's most complete line of monitor receivers.
- Crystal controlled or tunable for any VHF FM communication system.
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- Prices to meet any budget.
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55 North Jersey St., Indianapolis, Ind. Phone: ATlantic 1624

How a city of 19,000 people solved its sanitation problem

TIFFIN, OHIO — Faced with rising costs and mounting taxpayer dissatisfaction with open truck collection, the City Council of this progressive mid-western city wisely decided to organize a *new municipally-owned system of refuse collection and disposal.* Following a careful analysis of the problem, and numerous equipment tests, *two 16-yd. GAR WOOD LOAD-PACKERS** were put into operation in January 1953, with the comparative results shown in the chart below.

Sanitation Superintendent Francis C. Staib reports:

"Our new collection and disposal system fulfills a long standing need of the citizens of Tiffin. Thorough planning has achieved standards of municipal sanitation *which currently serve as a model for many small cities* . . . and with costs so moderate and service so efficient that complaints from taxpayers are past history. Our ten-year financing program has *placed no strain on the city's financial stability* . . . and the unprecedented economy of operation of our modern equipment gives every indication that our citizens *will continue to enjoy lowest possible service rates.*"

Your city too, can benefit from the advantages of a modern Gar Wood Load-Packer* refuse collection system. Ask your local Gar Wood distributor for a free Load-Packer* demonstration, or write today for complete descriptive literature. No obligation, of course.

*Load-Packer is the registered trademark of Gar Wood Industries, Inc.

Smart-looking 16-yd. Gar Wood Load-Packer* collects up to three times its rated capacity of *mixed* garbage and refuse in one trip. Low, wide hopper speeds loading, reduces strain, eliminates spillage.

Point-by-point COMPARISON	PREVIOUS SYSTEM	LOAD-PACKER* SYSTEM
1 Material Collected	*Organic garbage only.* Citizens and business establishments had to make own arrangements for trash disposal. Tin cans and bottles collected twice yearly.	*All garbage and refuse* collected on each trip. No special collections required for trash, cans, bottles, and other trash.
2 Service	Streets and alleys frequently *littered with garbage* and blowing papers from open trucks. Constant complaints.	Fully enclosed, leak and odor-proof Load-Packers improved sanitation, *eliminated complaints.*
3 Schedules	*Irregular and undependable.* Residential and commercial refuse frequently piled up awaiting pick-up.	*Regular weekly collections,* plus more frequent collections at business establishments and other places where needed.
4 Method of Disposal	Open pit . . . caused constant complaints, due to unsanitary and unsightly conditions at dump.	*Sanitary land fill* in natural gulley close to town. Refuse covered daily to eliminate odors, vermin, etc.
5 Costs	Paid from city funds. Latest low bid $20,000 per year with no improvement in service.	All costs for collection and disposal operation plus 10-year depreciation of capital investment *paid from moderate collection fees.* (Residential, all refuse — $3.00 quarterly.)

GW-LP-2

GAR WOOD INDUSTRIES, INC.
Wayne Division—Wayne, Michigan
Richmond Division—Richmond, Calif.

WORLD'S LARGEST MANUFACTURER OF DUMP BODIES AND HOISTS FOR TRUCKS AND TRAILERS

Municipal and Civic Publications

(*Continued from page* 177)

Other Reports Received

Finance & Taxation

COLORADO—Handbook on Utility Franchises. Published by Colorado Municipal League, 327 Norlin Library, Boulder, Colorado. May 1954. Illus. 50 pp. $3.50.

MILWAUKEE COUNTY, WIS.—1953 Financial Report for the Year Ended December 31, 1953. Submitted by Herman Kubiak, County Clerk, Milwaukee, Wis. Tables. 63 pp.

GENERAL—Compendium of State Government Finances in 1953. Prepared under the supervision of Allen D. Manvel, Chief, Governments Division, Bureau of the Census. Available from United States Government Printing Office, Washington 25, D. C. Tables. 65 pp. 40 cents (paper cover).

SALT LAKE CITY, UTAH—Auditor's Annual Financial Report for the Year Ended December 31, 1953. Louis E. Holley, City Auditor. Tables. 78 pp.

Laws and Legal Decisions

CHICAGO, ILL.—1953 Annual Report of the Department of Law. Submitted by John J. Mortimer, Corporation Counsel, Law Department, Chicago, Ill. Tables. 83 pp.

NEW YORK—Better Laws Make Better Bonds. An address by Dr. Frederick L. Bird, and John S. Linen. February 25, 1954. A Municipal Forum Publication. Copies of this address and information on prices may be secured by applying to William E. Bachert, Chairman of Committee on Publications, The Municipal Forum of New York, c/o The Bank of New York, 48 Wall St., New York 5, N. Y. 10 pp.

——Police Bureau Report on the Laws of 1954. New York State Division of Safety, 17 Elk St., Albany, N. Y. Prepared by Dennis J. Hurley, Attorney at Law, Police Bureau. 23 pp.

Lighting

SEATTLE, WASH.—Department of Lighting Annual Report. Submitted by E. R. Hoffman, Superintendent of Lighting. Illus. Tables. Graphs. 32 pp.

Parks and Recreation

BALTIMORE COUNTY, MD.—1953 Recreation Survey Report. Available from Hubert Snyder, Director, Board of Recreation, 34 W. Chesapeake Ave., Towson 4, Md. Copies of the report may be borrowed for a reasonable period of time. 107 pp. Maps. Amount for return postage, 20 cents.

LOUISVILLE, MISS.—Recreation. A Report to the Citizens. Mississippi State College, State College, Miss. The Social Science Research Center. 25 pp.

(*Continued on page* 187)

WHY USE JOHNSON WELL SCREENS?

1. Less drawdown.
2. Greater specific capacity.
3. Lowest pumping cost per million gallons of water.

True economy is measured not by first cost alone, but in lowest yearly cost. The JOHNSON WELL SCREEN combines an unmatched record of experience and dependability with greatest strength and durability. It is the finest and most truly economical well screen in the world.

EDWARD E. JOHNSON, INC.

well screen specialists since 1904

St. Paul 14, Minn.

MODEL 1.5M2S, *1500 watts, 115 volt AC on two-wheel cart. Manual control. Also 115 volt DC weighing 101 lbs.*

KOHLER ELECTRIC PLANTS

Portable Power Anywhere, Any Time

Take electricity to the job

Jobs move faster with electricity at the spot where the work is done. Low-cost portable model operates grass shears, pruners, chain saws, hedge trimmers, carpenters' saws, drills and other tools. Weighs 130 lbs. Handles for carrying.

Other models, 500 watts to 30 KW, for trucks, street repairs, police and fire departments, electro magnets. Also stand-by models to protect hospitals, sewage treatment and filtration plants, communication systems, schools, public buildings, when central station power is cut off. Write for folder I-T.

Kohler Co., Kohler, Wisconsin. Established 1873

KOHLER OF KOHLER

PLUMBING FIXTURES • HEATING EQUIPMENT • ELECTRIC PLANTS

AIR-COOLED ENGINES • PRECISION CONTROLS

Two CP Diesels Keep The "Follies" on Ice

Here's an example of CP performance and reliability—a pair of Chicago Pneumatic Model 68 diesel engines that generate over an estimated 1,000,000 kwh a year for The New Haven Arena. Besides furnishing light and power for the entire arena consisting of auditorium, parking garage, service station, ice plant, block of stores, and executive offices, they also drive two 10 x 10 ammonia compressors for the manufacture of commercial ice in the summer and refrigeration for rink ice skating in the winter.

Rated at 180 hp, 600 rpm, these engines are typical of many CP installations where multiple power requirements call for absolute dependability and low operating cost. CP diesel, dual-fuel and gas engines are available in sizes capable of delivering from 120 hp to 1750 hp. For more details write *Chicago Pneumatic Tool Company, 8 East 44th Street, New York 17, New York.*

One of the two CP Model 68 diesel engines generating light and power for The New Haven Arena.

Chicago Pneumatic
PNEUMATIC TOOLS • AIR COMPRESSORS • ELECTRIC TOOLS • DIESEL ENGINES • ROCK DRILLS • HYDRAULIC TOOLS • VACUUM PUMPS • AVIATION ACCESSORIES

Other Reports Received

(*Continued from page* 185)

Public Works

NEWTON, MASS.—Annual Report Public Works Department for the Year Ending December 31, 1953. Submitted by Willard S. Pratt, Director. Graphs. Tables.

OAK PARK, ILL.—Annual Report Department of Public Works, 1953. Submitted by Marshall S. Dutton Commissioner of Public Works. Tables. 61 pp.

Smoke Abatement

COLUMBUS, OHIO—1953 Annual Report of the Division of Smoke Regulation and Inspection, Department of Public Safety, Columbus, Ohio. Charts. Maps. Tables. Graphs. 42 pp.

Street Construction

WISCONSIN—Selected Papers from the Sixth Highway Engineering Institute. Bituminous Roads, February 23-26, 1954. Conducted by the University of Wisconsin, College of Engineering and University Extension Division in cooperation with the State Highway Commission and County Highway Commissioners Association, Madison, Wisconsin. Illus. Maps. Graphs. Tables.

Traffic

CHICAGO, ILL.—1953 Annual Report. Chicago Transit Board, Room 734, Merchandise Mart Plaza, Chicago 54, Ill. Illus. Table. Map. 57 pp.

OKLAHOMA—Factual Report of Movement of Out-of-State Passenger Cars on Oklahoma Highways. Prepared by the Oklahoma Department of Highways, Department of Statistics, in cooperation with U. S. Department of Commerce, Bureau of Public Roads, Oklahoma City, Okla.

PARSONS, KANS.—Parsons Parking Survey. Special Report No. 53. Prepared by Governmental Research Center, University of Kansas, Lawrence, Kans. Tables. Charts. Appendices. 34 pp.

Water and Sewerage

CHICAGO, ILL.—Annual Report, Department of Water and Sewers 1953. Obtainable from Commissioner's Office, Chicago 2. Illus. 27 pp.

DUBUQUE, IOWA—Fifty-Fourth Annual Report of the Water Department. Report from January 1 to December 31, 1953. Illus. 60 pp.

ELMIRA, N. Y.—Elmira Water Board 1953 Annual Report. Tables. Illus. 34 pp.

GARDNER, MASS.—Annual Report of the Water and Sewer Department 1953. Tables. 19 pp. Mimeo.

KANSAS CITY, KANS.—The 1953 Annual Report of Board of Public Utilities operating the municipal Water, Light, and Power Plant. Illus. Graphs. 38 pp.

KENNEBEC, MAINE—Forty-Seventh Annual Report of the Trustees and Officers of the Kennebec Water District for the Year ending December 31, 1953. Available from Superintendent J. Elliott Hale, Masonic Bldg., 16 Common St., Waterville, Maine. Illus. Tables. 67 pp.

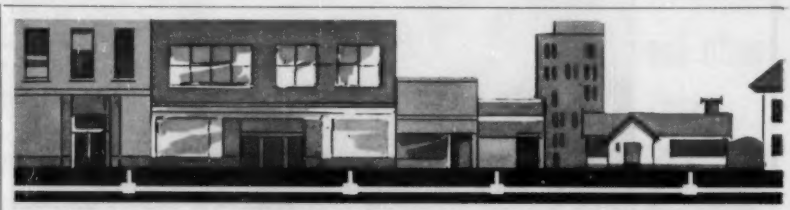
MADRAS, INDIA—Corporation of Madras Water Works Department Administration Report for 1952-53. Maps. Graphs. Tables 81 pp.

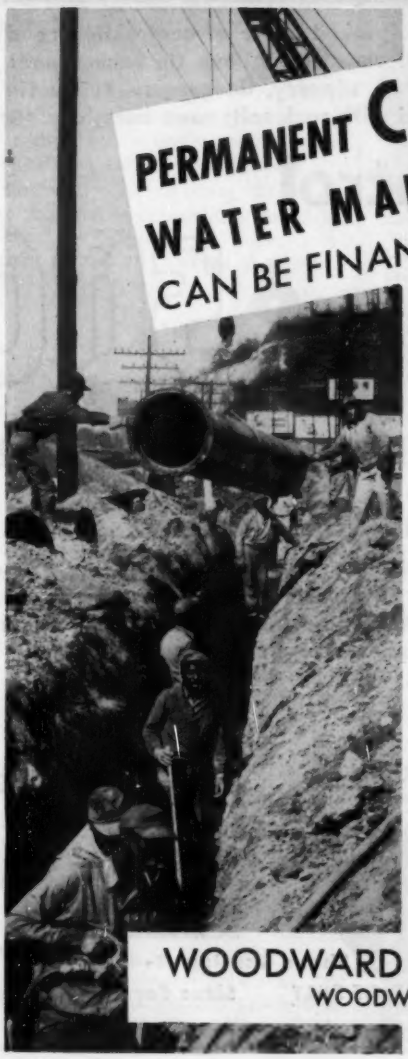
VIRGINIA—Water and Sewer Connection Charges. Report No. 362, May 1954. Available from League of Virginia Municipalities, 905 Travelers Bldg., Richmond 19, Va. 10 pp.

WASHINGTON, D. C.—A Clean River for the Nation's Capital. February 1954. Obtainable from Interstate Commission on the Potomac River Basin, 203 Transportation Bldg., Washington 6, D. C., map. 7 pp.

——A report on Water Pollution in the Washington Metropolitan Area. Section II Technical Report. February 1954. May be secured from Interstate Commission on the Potomac River Basin, 203 Transportation Bldg., Washington 6, D. C. Maps. Graphs. 39 pp.

WINNIPEG, MANITOBA—Greater Winnipeg Sanitary District. Annual Report for Year Ended December 31, 1953. Write Office General Manager, N. S. Bubbis, 455 Ellice Ave., Winnipeg, Manitoba. Illus. Tables. Maps. 47 pp.





PERMANENT CAST IRON WATER MAIN EXTENSIONS CAN BE FINANCED AT LOW RATES

Water revenue bonds enjoy an exceptionally good rating among investment bankers everywhere. That's why cast iron water main extensions and installation can be financed at such low cost.

Cast Iron Pipe is sound "collateral" for bonds maturing over a long period of years because it lasts for centuries and there is no risk of its breakdown.

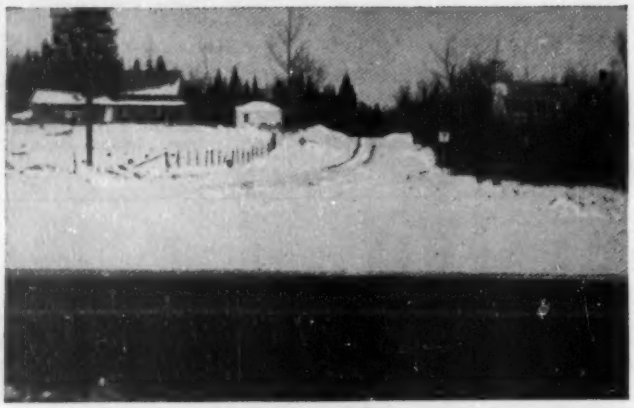
For the health protection of your community be sure to keep your water system in steady step with its growth.

• • • • •

Woodward Iron Company does not manufacture pipe, but supplies leading Cast Iron Pipe foundries with high grade foundry iron from which pipe is made.

WOODWARD IRON COMPANY
WOODWARD, ALABAMA

What will your ROADS look like this winter?



this?

or this?

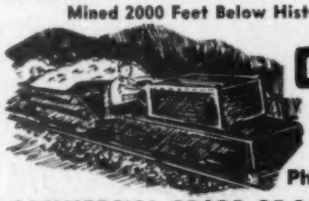
An actual, unretouched photo of contrasting road treatments in New Hampshire. Above (in background) sanded, snow-covered, slippery, dangerous. Below (in foreground) treated with rock salt; road bare, dry.

control ICE and SNOW with CAYUGA ROCK SALT

Cayuga Rock Salt COSTS LESS . . . MAKES HIGHWAYS SAFER

Now is the time to order your supply of Cayuga Rock Salt, to be sure you have it on hand for the first snowfall . . . to control ice and snow on your roads and streets. Buy your supplies before the snow flies!

NATURE'S PURE PRODUCT-
Mined 2000 Feet Below Historic Cayuga Lake



CAYUGA ROCK SALT CO., INC.

Phone Lansing 4-4221 MYERS, NEW YORK

COMMERCIAL GRADE OF SALT Sizes For All Purposes BULK or BAGS

watch the LEAVES DISAPPEAR!

Turbo Jet — the power leaf mill that **really** does a job — makes leaves literally disappear like magic! Here, at last, is a **practical,** low-cost answer to leaf removal problems. Based on an entirely new principle, Turbo Jet cleans up and pulverizes leaves like nothing you've ever seen!

- ★ *Pulverizes leaves into a fine, granulated chaff that's next to invisible on lawns. Makes excellent mulch.*
- ★ *Unique "two-way action" permits cleaning lawns in swaths up to 10 feet in width.*
- ★ *Gets leaves out of ivy beds — from around curbs and fences — shrubbery — other "hard-to-reach" places!*
- ★ *"Blower" action for drying out wet leaves — permits pulverizing even immediately after rain!*
- ★ *Sturdy, light, easy to use — permits one man to do the work of a whole gang of men with rakes and trucks for hauling!*

Many users report Turbo Jet pays for itself in the first season! Before you go through another Fall Season cleaning up leaves by outmoded, expensive methods—investigate the Turbo Jet story NOW. **Folder describing Turbo Jet available on request.**

TURBO JET

THE TURBO-JET MFG. CO.
22 Bowman Terrace
CINCINNATI 29, OHIO

Philadelphia's Hydrant Sprinklers

(*Continued from page* 89)

to the user except where damage has been done to the meter due to negligence.

Another measure adopted as part of the program for modernizing Philadelphia's water-works practices will be to have meters installed by the city rather than plumbers as has been done for years. There were several reasons for this change. The department will be able to keep its own records of meter installations, and it will see to it that the meter is correctly installed. The meter will be sealed in place by the installer who will use copper wires to seal the register and one connection. A single visit to the premises by one man will permit completion of all these operations.

Another phase of the general meter program includes the reorganization of the meter repair shop. Installation of production-line methods and equipment has increased the schedule of meter repairs. This new practice will make possible rotation of meters in the city's system every 10 years for testing and repairing.

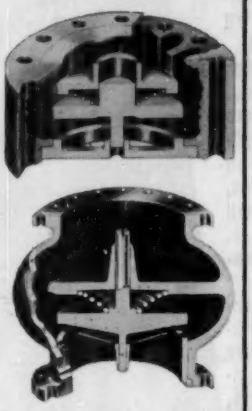
Completion of the universal metering program is expected to result in substantial savings in water consumption and an increase in revenue for the department.

Discrimination in FHA Apartments Outlawed In New York City

A NEW CITY LAW forbidding discrimination in FHA-insured apartment housing was enacted in New York City in July. The law, the first of its kind in the United States, is expected by Mayor Robert F. Wagner to mark another important step towards eliminating the evils of discrimination in that city. It will affect approximately 12,000 new or rehabilitated multifamily dwelling units a year by making these more readily available to persons who had formerly been discriminated against.

The new law is expected to prevent a repetition of the rental pattern in FHA housing built in New York City between 1946 and 1952. During that period, 82,841 new multifamily units representing more than 85% of the apartments built in the city in those six years, were insured by FHA. Yet only 893 of these insured units were made available to non-whites.

For all Piping systems handling . . .



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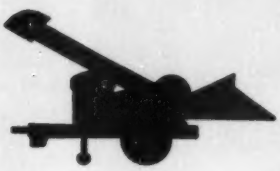

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Conventions—When and Where

(*Continued from page* 169)

Sept. 28-30—Green Bay, Wis.
AMERICAN WATER WORKS ASSOCIATION—Wisconsin Section. Annual Meeting (Northland Hotel). Sec., Leon A. Smith, City Hall, Madison, Wis.

Sept. 28-30—Mitchell, S. D.
SOUTH DAKOTA WATER AND SEWAGE WORKS. Annual Meeting (Lawler Hotel). Exec. Sec., Charles E. Carl, Director, Division of Sanitary Engineering, State Department of Health, Pierre, S. D.

Sept. 28-30—Nashville, Tenn.
SOUTHEASTERN ASSOCIATION OF STATE HIGHWAY OFFICIALS. Annual Meeting (Hotel Andrew Jackson). Sec.-Treas., Berrien W. Davis, State Highway and Public Works Commission, Raleigh, N. C.

Sept. 29-Oct. 1—Columbus, Ohio
OHIO MUNICIPAL LEAGUE. Annual Meeting. Exec. Dir., Allen E. Pritchard, Jr., 55 E. State St., Columbus, Ohio.

Oct. 3-5—Lake Placid, N. Y.
COUNTY OFFICERS ASSOCIATION OF THE STATE OF NEW YORK. Annual Meeting (Lake Placid Club). Exec. Sec., Donald C. Scribner, County Bldg., Johnstown, N. Y.

Oct. 3-8—Baltimore, Md.
AMERICAN INSTITUTE OF PARK EXECUTIVES. Annual Conference (Hotel Lord Baltimore). Exec. Sec., Alfred B. LaGasse, 143 S. Lincoln, Aurora, Ill.

Oct. 4-5—Atlantic City, N. J.
PENNSYLVANIA MUNICIPAL AUTHORITIES ASSOCIATION. Annual Conference (Haddon Hall). Sec.-Treas., Claude C. Fogelman, 1717 Main St., Northampton, Pa.

Oct. 4-6—Poland Spring, Maine
NEW ENGLAND WATER WORKS ASSOCIATION. Annual Meeting (Poland Spring House). Sec., Joseph C. Knox, 75 Tremont St., Boston 8, Mass.

Oct. 4-7—Atlantic City, N. J.
INTERNATIONAL MUNICIPAL SIGNAL ASSOCIATION. Annual Meeting (Ambassador Hotel). Sec., Irvin Shulsinger, 130 W. 42nd St., New York 36, N. Y.

Oct. 6-7—Jefferson City, Mo.
MISSOURI MUNICIPAL LEAGUE. Annual Meeting (Governor Hotel). Exec. Dir., Bruce J. Carl, 212-214 Guitar Bldg., Columbia, Mo.

Oct. 6-8—St. Paul, Minn.
AMERICAN WATER WORKS ASSOCIATION—Minnesota Section. Annual Meeting (Hotel Lowry). Sec., Leonard N. Thompson, 216 Court House, St. Paul. Minn.

Oct. 7-8—Des Moines, Iowa
LEAGUE OF IOWA MUNICIPALITIES. Annual Meeting (Hotel Fort Des Moines). Exec. Sec., Max A. Conrad, 303 Tampa Bldg., Burlington, Iowa.

Oct. 10-12—Springfield, Ill.
ILLINOIS MUNICIPAL LEAGUE. Annual Meeting (Leland Hotel). Exec. Dir., A. L. Sargent, 537 S. Fourth St., Springfield, Ill.

***Oct. 10-13—New York, N. Y.**
NATIONAL INSTITUTE OF GOVERNMENTAL PURCHASING. Ninth Annual Conference and Products Exhibit (Hotel Statler). Exec. Dir., Albert H. Hall, 1001 Connecticut Ave. NW., Washington 6, D. C.

Oct. 11-14—Cincinnati, Ohio
FEDERATION OF SEWAGE AND INDUSTRIAL WASTES ASSOCIATION. Annual Meeting (Netherland–Plaza Hotel). Exec. Sec.-Ed., W. H. Wisely, 325 Illinois Bldg., Champaign, Ill.

Oct. 11-14—Philadelphia, Pa.
NATIONAL ASSOCIATION OF HOUSING AND REDEVELOPMENT OFFICIALS. Annual Meeting (Bellevue-Stratford Hotel). Exec. Dir., John D. Lange, 1313 E. 60th St., Chicago 37, Ill.

***Oct. 11-15—Buffalo, N. Y.**
AMERICAN PUBLIC HEALTH ASSOCIATION. Annual Meeting (Memorial Auditorium). Exec. Sec., Reginald M. Atwater, M.D., 1790 Broadway, New York 19, N. Y.

Oct. 12-15—Cincinnati, Ohio
OHIO SEWAGE AND INDUSTRIAL WASTES TREATMENT CONFERENCE. Annual Meeting in conjunction with the FEDERATION OF SEWAGE AND WASTES ASSOCIATION Meeting (Netherland–Plaza Hotel). Sec.-Treas., W. E. Conrad, Ohio Departments Bldg., Columbus 15, Ohio.

Oct. 13-15—Cedar Rapids, Iowa
AMERICAN WATER WORKS ASSOCIATION—Iowa Section. Annual Meeting (Hotel Roosevelt). Exec. Sec., H. V. Pedersen, Marshalltown Water Works, Marshalltown, Iowa.

Oct. 14-15—Lincoln, Nebr.
DIESEL OPERATORS CONFERENCE. Annual Conference (Student Union, University of Nebraska). For information address Robert A. Ratner, Supervisor of Institutes, University Extension Division, University of Nebraska, Lincoln, Nebr.

Oct. 14-16—Point Clear, Ala.
AMERICAN CONCRETE PRESSURE PIPE ASSOCIATION. Annual Meeting (Grand Hotel). Mang. Dir., Howard F. Peckworth, 228 N. LaSalle St., Chicago 1, Ill.

(*Continued on page* 193)

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BUFFALO MUNICIPAL CASTINGS

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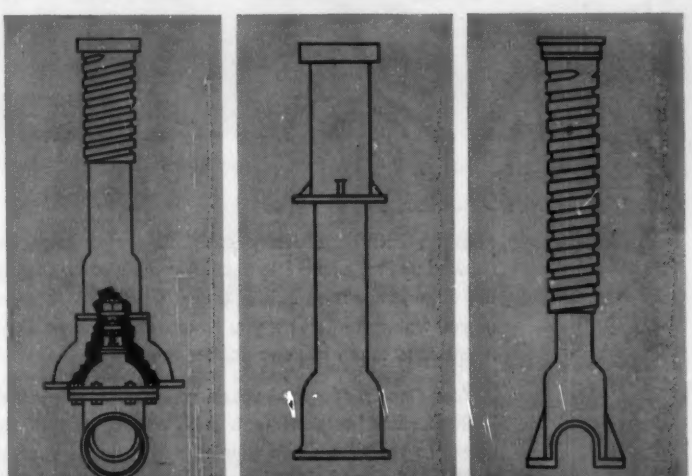
No matter what size, shape or style municipal casting you may desire — you're practically sure to find a "Buffalo" casting to serve your needs. Or, where desired, castings may be made to your own specifications. Whether you need valve, service or roadway boxes, meter boxes, manhole rings and covers or other municipal castings, you'll find all "Buffalo" castings designed for service and dependability.



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FLAG DAY?

June 14th was more than Flag Day, it was EVALUATION DAY for CD Warning systems.

Were you one of the few municipalities who found their systems completely adequate?

No one can be severely criticised for deficiencies that showed up in the Flag Day tests. A complete warning system, like Rome, cannot be built in a day. Criticism will be leveled at you from all angles if you have not evaluated those test results and taken steps to correct the deficiencies.

Your time limit for the 'real thing' is not known; you cannot justify further postponement. Each passing day brings you closer to the time when you *must* act, when your system *must* function with 100% coverage. Call on FEDERAL for assistance with your CD warning system.

CD

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(*Continued from page* 191)

***Oct. 17-20—El Paso, Texas**
AMERICAN WATER WORKS ASSOCIATION—Southwest Section. Annual Meeting (Cortez Hotel). Sec., Leslie A. Jackson, Municipal Water Works, Robinson Memorial Auditorium, Little Rock, Ark.

Oct. 17-20—Los Angeles, Calif.
LEAGUE OF CALIFORNIA CITIES. Annual Meeting (Biltmore Hotel). Exec. Dir., Richard Carpenter, Hotel Claremont, Berkeley 5, Calif.

Oct. 18-21—Houston, Texas
INTERNATIONAL ASSOCIATION OF FIRE CHIEFS. Annual Convention (Rice Hotel). Exec. Sec., Chief Jay W. Stevens, Pacific Coast Association of Fire Chiefs, Merchants' Exchange Bldg., San Francisco 4, Calif.

Oct. 18-22—Chicago, Ill.
NATIONAL SAFETY CONGRESS AND EXPOSITION. Annual Meeting (Conrad Hilton Hotel). Gen. Sec., R. L. Forney, National Safety Council, 425 N. Michigan Ave., Chicago 11, Ill.

***Oct. 19-22—Atlantic City, N. J.**
PENNSYLVANIA WATER WORKS ASSOCIATION. Annual Meeting (Chalfonte Hotel). Sec., David Dunlap, 2609 N. Second St., Harrisburg, Pa.

***Oct. 19-22—Winston-Salem, N. C.**
NORTH CAROLINA LEAGUE OF MUNICIPALITIES. Annual Convention (Hotel Robert E. Lee). Exec. Sec., Mrs. Davetta L. Steed, 1009 Raleigh Bldg., Raleigh, N. C.

***Oct. 22-23—Little Rock, Ark.**
ARKANSAS MUNICIPAL LEAGUE. Annual Convention (Marion Hotel). Exec. Dir., Glenn Zimmerman, 416 Maple N., Little Rock, Ark.

***Oct. 24-26—Fort Worth, Texas**
LEAGUE OF TEXAS MUNICIPALITIES. Annual Convention (Hotel Texas). Exec. Dir., E. E. McAdams, 108 E. 19th St., Austin, Texas.

***Oct. 24-26—Kansas City, Kans.**
KANSAS ASSOCIATION OF MUNICIPAL UTILITIES. Annual Convention (Town House Hotel). Ass't. Sec., A. D. McGuire, P. O. Box 99, Overland Park, Kans.

Oct. 24-27—Birmingham, Ala.
AMERICAN WATER WORKS ASSOCIATION—Alabama–Mississippi Section. Annual Meeting (Tutwiler Hotel). Sec.-Treas., C. W. White, 537 Dexter Ave., Montgomery, Ala.

***Oct. 25-27—Stillwater, Okla.**
DIESEL POWER PLANT OPERATORS CONFERENCE. Annual Meeting (Student Union, A & M College). For information address L. Sheerer, Exec. Dir., Division of Engr. & Ind. Extension, Oklahoma Institute of Technology, Stillwater, Okla.

***Oct. 26-29—Long Beach, Calif.**
AMERICAN WATER WORKS ASSOCIATION—California Section. Annual Meeting (Wilton Hotel). Sec., Henry F. Jerauld, Water Department, 1040 Manzanita, Pasadena 3, Calif.

***Oct. 27-29——Baltimore, Md.**
AMERICAN WATER WORKS ASSOCIATION—Chesapeake Section. Annual Meeting (Sheraton Belvedere). Sec., C. J. Lauter, 6955 33rd St. NW., Washington 15, D. C.

***Oct. 28-30—Memphis, Tenn.**
UNITED STATES CIVIL DEFENSE COUNCIL. Annual Conference (Peabody Hotel). Exec. Sec., Mary E. Baker, 314 Hartman Bldg., Columbus, Ohio.

***Nov. 3-5—Richmond, Va.**
AMERICAN WATER WORKS ASSOCIATION—Virginia Section. Annual Meeting (Jefferson Hotel). Sec.-Treas., 213 Carlton Terrace Bldg., Roanoke 16, Va.

***Nov. 4-6—Atlantic City, N. J.**
AMERICAN WATER WORKS ASSOCIATION—New Jersey Section. Annual Meeting (Hotel Madison). Sec.-Treas., C. B. Tygert, Box 178, Newark 1, N. J.

***Nov. 5-10—Chicago, Ill.**
ADULT EDUCATION ASSOCIATION OF THE UNITED STATES. National Conference on Adult Education (Morrison Hotel). Pres., Paul H. Sheats, 743 N. Wabash, Chicago, Ill.

***Nov. 7-9—St. Petersburg, Fla.**
AMERICAN WATER WORKS ASSOCIATION—Florida Section. Annual Meeting (Soreno Hotel). Exec. Sec., Harvey Skaggs, P. O. Box 2328, Jacksonville, Fla.

***Nov. 8-9—Ashville, N. C.**
AMERICAN WATER WORKS ASSOCIATION—North Carolina Section. Annual Meeting (George Vanderbilt Hotel). Sec.-Treas., E. C. Hubbard, P. O. Box 2091, Raleigh, N. C.

***Nov. 8-9—Huntington, W. Va.**
AMERICAN WATER WORKS ASSOCIATION—West Virginia Section. Annual Meeting (Pritchard Hotel). Exec. Sec., H. K. Gidley, State Health Dept., Charleston, W. Va.

***Nov. 9-11—Seattle, Wash.**
AMERICAN ASSOCIATION OF STATE HIGHWAY OFFICIALS. Annual Convention (Olympic Hotel). Exec. Sec., Hal H. Hale, 917 National Press Bldg., Washington 4, D. C.

***Nov. 28-Dec. 1—Philadelphia, Pa.**
AMERICAN MUNICIPAL ASSOCIATION. Annual Convention (Bellevue-Stratford). Exec. Dir., Patrick Healy, Jr., 523 Transportation Bldg., Washington, D. C.

Dec. 2-7—San Juan, Puerto Rico
INTERAMERICAN MUNICIPAL ORGANIZATION. Interamerican Congress of Municipalities. For information address Comision Panamericana de Cooperacion Intermunicipal, 351 Obispo St., Habana, Cuba.

***Dec. 5-8—St. Petersburg, Fla.**
INTERNATIONAL CITY MANAGERS' ASSOCIATION. Annual Convention (Vinoy-Park Hotel). Exec. Dir., Clarence E. Ridley, 1313 E. 60th St., Chicago 37, Ill.

●TENNANT Sweeper cleans 48" path; replaces 3 to 12-man crew.

New Compact Machine Sweeps Gutters Walks and Alleys at 1/5 Usual Cost

BY SWEEPING congested areas with a new type power sweeper instead of pushbrooms, Akron, Cleveland and several other cities may save up to 80% this year in labor costs.

The new sweeper, shown at the APWA meeting in New Orleans last fall, is a compact heavy-duty machine. It cleans a 48" path and turns easily in a 5-ft. radius.

Its sweeping capacity is reported to equal that of a 3 to 12-man pushbroom crew.

Sweeps Cleaner Than a Crew

The sweeper has a powerful brush-and-vacuum system which eliminates need for water spraying or "wetting down." A rotating curb-brush sweeps leaves, dust and litter into main path of the machine.

A 36" brush, in a vacuumized compartment, throws dirt forward into an enclosed 9 cu. ft. hopper. Sweeping speed, with 2-speed transmission, is 1½ to 8 MPH.

Pays For Itself In 6 Months

The new sweeper has proved most successful in "mechanizing" whitewing work in special congested areas where big sweepers can't be used—such as gutters in downtown areas, walks, alleys, garages, driveways, etc.

In such areas a single machine is said to pay for itself in 1 to 6 months.

Air terminals, auditoriums, piers and parking lots also can be swept most economically this way.

For details, please write or wire to the G. H. TENNANT CO., 2520 N. 2nd St., Minneapolis 11, Minnesota.

You don't have to stop traffic . . .

. . . to bore road crossings

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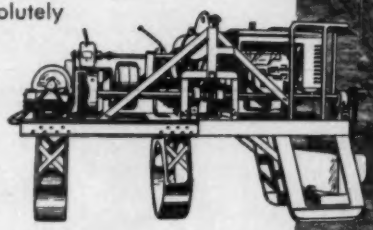
ROAD BORING MACHINE

Installs casing as boring progresses — eliminates cave-ins. Absolutely prevents settling of concrete slab highways or railroad beds. Extremely accurate in alignment. Adaptable to all sizes of casing from 3" to 34".



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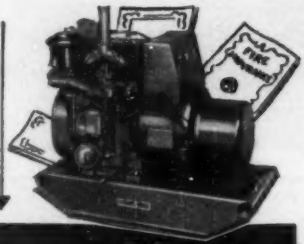

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When the lights stay on, elevators run and other automatic machinery keeps working, chances for panic, injuries and loss of life are greatly reduced. That's why stand-by electric power generating sets are a *must* for schools, hospitals, theaters, municipal buildings and other places where large numbers of people assemble.

If you do not have that kind of "panic insurance," let us send you the facts, free, about Fairbanks-Morse generating sets. They are available in capacities up to 40,000 watts. Write Fairbanks, Morse & Co., 600 S. Michigan Ave., Chicago 5, Ill.

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Aerial Maps Speed City Planning

A portion of a contact print, made from original aerial negatives, is made to the scale of 1-inch equals 200 feet. Standard size for contact prints is about 9 x 9 inches.

Municipal planning, including the charting of urban developments, traffic studies, park location, and house spacing, is facilitated by the use of aerial maps.

Comparable in accuracy with the best ground methods, aerial surveys take only 1/5 as long to make, and are reported to cost about 1/5 as much. Moreover, they avoid the terrain limitations effecting ground surveys. The photogrammetric map is consistently accurate in every portion of the photographed area.

The ABRAMS AERIAL SURVEY CORP., LANSING 1, MICH., will provide your city with accurate, low-cost aerial surveys, including mosaics and topographic maps. The mosaics, a group of aerial photographs that are matched and assembled to form a single picture of an area, are not only valuable to engineers but aid local government units as well. They may be used for zoning and classification studies, parking problems, tax maps, and assessment purposes. The topographic maps are useful for city planning, water works projects, and land utilization.

A complete description of the services offered by this company is contained in the new booklet *Aerial Surveys and Maps From Photographs.* For your copy, write Abrams directly, or you may use the Post Card on the colored page in this section. Circle No. 950.

Kitchen Food Waste Disposer Promotion

The direction and future of kitchen food waste disposer prices may be indicated by a combination rate offered by Youngstown Kitchens. Though the usual price is $94.50, the disposer is offered for only $29.95 with the purchase of any deluxe cabinet sink, ensemble sink, or Jet-Tower dishwasher. In announcing the bargain to its dealers, the MULLINS MFG. CO., WARREN, OHIO, gave answers to a number of questions that might be expected from customers. Some of these are given below:

Q. Why should I have a food waste disposer?

A. For health and convenience. Disposers banish garbage forever, wash food waste down the drain *before* it becomes stale, smelly refuse. A disposer does away with disease-breeding garbage cans that attract flies and rodents.

Q. How much food can I put through the disposer at one time?

A. All you want. There are no load limits; there's no stop-and-go feeding.

Q. Does the disposer ever jam?

A. Two sets of shredding edges which double blade life, that automatically reverse direction each time used, eliminate jams.

Q. Won't the disposer get dirty inside and smell just like a garbage can?

A. No. The vigorous action of the water and the swirling blades clean out every particle of food, leaving no chance for food to accumulate and make odors.

Q. Will it dispose of celery?

A. Yes.

Q. What about bones?

A. There's no problem, as long as the bones aren't excessively large.

Q. Is it economical to own and operate?

A. Yes. A disposer, on an annual average, uses less electricity than an electric clock. Because it is designed and built with little or no need for maintenance, the real owning cost is extremely low.

Q. What is the average daily water use per unit?

A. The average water consumption of disposer operation is estimated at 1½ to 2 gallons per day per person in the home.

Speeders Clocked and Convinced

Police Chief George Harmon (right) and Patrolman Robert Baumgartner check the speed of a passing motorist.

Speed is one of the most troublesome aspects of traffic and obtaining evidence is of the utmost importance. Speed-watch, used by scores of municipal police departments, makes pursuit unnecessary. The speeder is stopped by a hand signal and shown his recorded speed. The result is educational as well as conclusive.

Speed-watch is an electrical timing device, compact and portable, in a neat case. It is a product of TRAFFIC HOUSE, INC., 202 NATIONAL BANK BLDG., DECATUR, ILL. For full information, write the company directly, or you may use the Post Card on the colored page in this section. Circle No. 952.

Automatic Surge Preventers Ease Pump Operation

Booster pumps operating in water transmission lines no longer have to take the jolt and slap that the water generally develops, if they are protected by a Cla-Val Controller. Now that the unit has been equipped with a new type speed control, it provides the pumps with better freedom from surges than an experienced operator could provide if he were constantly on duty at the pump.

The pump-control valve is automatic, of the modified globe-type design, operated by a diaphragm. A 4-way solenoid pilot valve controls its operation. The valve uses line pressures for operation, and does not need an outside pressure supply. It is equipped with a microswitch assembly which serves as an electrical interlock on the pump-motor starting switch.

To eliminate automatically and positively all starting and stopping surges, the

assembly forces the pump to start against a closed valve. The valve then gradually opens, slowly increasing the line pressure to a full pumping head.

To stop the pump, the valve first closes, completely and slowly, and then the pump stops automatically. The controller permits the valve to open or close, quickly or slowly, as specific conditions dictate. Thus, it automatically controls the pump more accurately than a skilled operator can when starting or stopping the pump manually.

The company also has a control valve for deep-well pumps, of similar design. However, this controller permits the release of the first rush of air and water, discharging them to the atmosphere. This prevents water from being forced into the main too rapidly. Both valves can operate dependably under temperatures ranging from –40° to 180° F, and under working pressures of 175 psi for Class 125 valves, and 300 psi for Class 250 valves.

B-60P describes the Booster pump, and *B-61P*, the deep-well controller. Both bulletins are available from the CLA-VAL Co., BOX 949, ALHAMBRA, CALIF. Write directly, or you may use the Post Card located on the colored page in this section. Circle No. 975.

STOP *Corrosion* on

- GAS DISTRIBUTION SYSTEMS
- WATER LINES
- UNDERGROUND CABLES
- STORAGE TANKS

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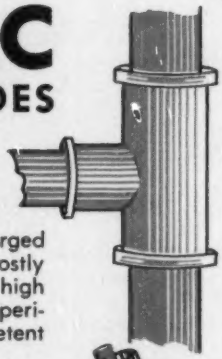
MAGNESIUM ANODES

Gas or water line leaks due to corrosion are expensive profit eaters in both repair time and replacement costs. An-Spec magnesium anodes protect your underground or submerged metal structures from industries most costly enemy—CORROSION. Call us for high quality magnesium anodes . . . experienced installation crews . . . competent engineering . .



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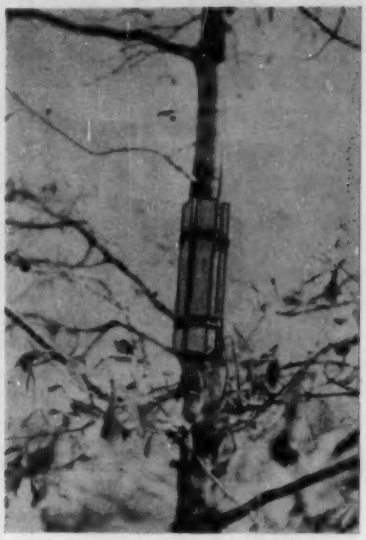
Neptune Meter Moves to Enlarged Offices

Robert W. Ballantine, secretary of the Neptune Meter Co., advises us that the sales headquarters and executive offices of the firm have been moved to larger quarters at 19 W. 50th St., New York City. Until July 31st, Neptune was located at 50 W. 50th St.

Brace and Set Trees With Strapping



A good way to set and brace trees has been developed by A. J. GERRARD & Co., 1952 HAWTHORNE AVE., MELROSE PARK, ILL.

Two to four pieces of ½ x 2-inch wood strips are strapped around the trunk of the tree at the point to be braced using No. 311 Steelbinder strapping. The strapping is tensioned with a No. 100 Steelbinder tool. On larger trees, the straps around the wood strips can be used for attaching guy straps in setting the trees.

Park officials adapting the Steelbinder method, are assured efficient bracing and setting without damaging the trees. In addition, Steelbinder strapping does the job in minimum time and is easily removed.

A. J. Gerrard has also developed a new tensioning tool for strapping concrete forms. Called Formbinder, the new tool may be easily operated from any position to tie floor, wall or bridge forms.

Detailed information on the Steelbinder method and the new Formbinder tensioning tool may be obtained by writing to the manufacturer, or you may use the Post Card on the colored page in this section. Circle No. 967.

ROADMASTER
Street Sweeper
WIRE

High Scleroscope Rating
Uniform temper.

Specially processed for high fatigue — against breakage. Long wearing. Conveniently cut and delivered in 100 and 200 lb. boxes. Prompt shipment from stock of all standard sizes.

This gutter broom wire will prove an economy in your service.

"MORE MILES PER BRUSH"

JOHNSON
Steel & Wire Co., Inc.
WORCESTER 1, MASS.
New York Philadelphia Pittsburgh
Cleveland Detroit Akron Chicago
Atlanta Houston Tulsa
Los Angeles Toronto
A SUBSIDIARY OF PITTSBURGH STEEL COMPANY

Save Draftsmen's Time

YOUR TYPIST CAN DO THE JOB BETTER

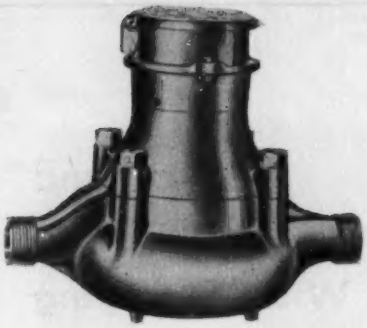
The Vari-Typer lettering machine is the fastest and most economical method of lettering specifications on tracings and drawings. It is four to five times faster than hand lettering and is operated by an office typist. Every letter and figure is uniformly clear and distinct. Instantly changeable type, with hundreds of different styles to choose from in sizes ranging from 6 point to 18 point. Write today for information.

Vari-Typer
Lettering Machine

Body copy produced on DSJ Model. Headlines photo-composed on the Headliner.

RALPH C. COXHEAD CORP.
720 Frelinghuysen Avenue.
Newark 5, N.J.
Please send Vari-Typer Book E-4
NAME.....
COMPANY.....
ADDRESS.....
CITY.....ZONE...STATE...

THIS METER gives you



1. PRECISION ACCURACY
Calmet's oscillating piston is semi-floating, precision balanced, and measures with precision accuracy the various flows to the smallest drip.

2. EXTREME LONG LIFE
Calmet's slower moving piston and gear train means less wear on precision parts, hence long life accuracy. Its simple design assures years of service with a minimum of attention.

3. LOW UPKEEP
Calmets are easy to take apart, easy to repair. The split case design with spuds in the base permits quick removal of working parts for cleaning or inspection without breaking the line connection.

4. FROST PROTECTED
When the meter freezes or pressure exceeds 450 pounds, Calmet's exclusive FROST PROOF BOLTS provide maximum protection against damage to working parts.

"THE METER YOU CAN COUNT ON"
MANUFACTURED BY
WELL MACHINERY & SUPPLY CO., INC.
FORT WORTH, TEXAS

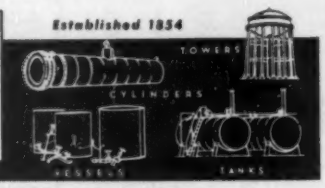
CALMET

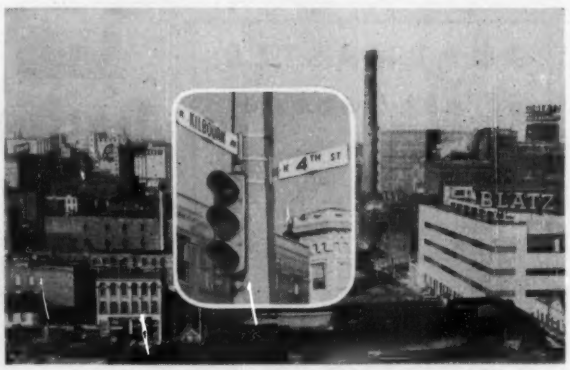
TEN YEARS
before the Battle of Atlanta

In 1854, ten years before the Battle of Atlanta, we started out as a small ironworks. Many communities and many mills secured their first elevated tanks for water supply from us. For the privilege of celebrating our Centennial, we express our appreciation for the friendship of four generations of customers, and the loyalty of four generations of workers.

1854 R.D. COLE *Centennial* 1954

R.D. COLE
MANUFACTURING CO.
NEWNAN, GA.





"SIGNS IN THE SKY"

Among many noteworthy things, Milwaukee is famous for its beer. Brewery signs are highly visible on the skyline, by day or night. Readily seen, too, are the easy-to-read street signs that mark Milwaukee's thoroughfares.

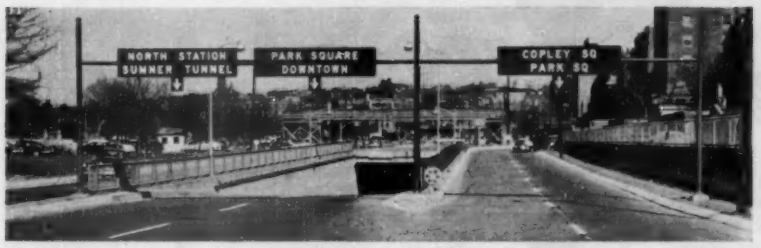
In many interesting locations you'll find FERRO signs . . . visible day or night; permanent porcelain enamel fused on finest steel.

On any street, road or highway, FERRO is the sign of good government. For full details, write:

FERRO ENAMELING CO.
1100 Fifty-Seventh Avenue Oakland 21, California

Purchasing News

Overhead Signs on Monotube Structures



Flexible Monotube sign support installations will meet virtually any highway condition.

Mounted on steel-tube structures, signs on the James J. Storrow Memorial Parkway in Boston are located where visibility is good, at a cost no greater than that of roadside signing. These structures require less right-of-way width; a prime requisite on the Parkway. Here width is limited on one side by the Charles River and on the other side, for most of its length, by apartment buildings fronting on exclusive Beacon Street.

An objection to overhead signing has been the expensive and unsightly open truss structures. For the Storrow Parkway, the Metropolitan District Commission, in cooperation with THE UNION METAL MFG. CO. OF CANTON 5, OHIO, developed a new type of structure with steel tubing columns and crossbeams. The signs were manufactured and erected by STANDARD SIGN & SIGNAL CO., CLINTON, MASS., using Stimsonite cutout letters and numerals made by AGA DIV., ELASTIC STOP NUT CORP. OF AMERICA, ELIZABETH, N. J. There are 46 traffic directional signs and four regulatory signs. They are made of ⅝-inch marine plywood bolted to frames of galvanized angle iron.

DOWN the DRAIN

with Ice and Snow. Your winter streets will be Summer-Safe if you'll use "Scotchman"—applied de-icing salts (No abrasives).

No plugged catch basins.

No excessive spring clean-up.

You'll get FASTER Ice and Snow Control using less of your Maintenance Dollar. You'll save: TIME, MONEY, and LIVES by spreading de-icers THE "SCOTCHMAN-WAY".

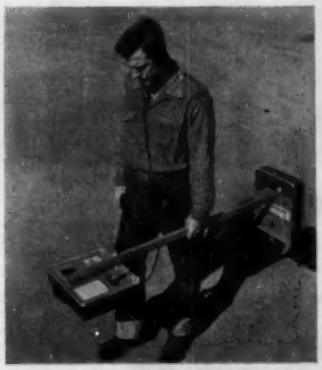
See us in Booth A-15 at the APWA Meeting Sept. 19-22 in Atlantic City, N. J.

TARRANT MFG. CO. East Ave., Saratoga Springs, N.Y.

FISHER M-SCOPE

"ELECTRONIC WITCH"
PIPE-CABLE-FINDER
—LEAK-DETECTOR—

USED AS A PIPE FINDER



USED AS A LEAK DETECTOR

- Fiberglas Cases
- 50% Lower Batt. Cons.
- Unsurpassed Performanace
- Liberal Trade-in Allowance

PRICE ONLY $162.50

- IMMEDIATE SHIPMENT
- WRITE TODAY FOR THE COMPLETE "ELECTRONIC WITCH" STORY.

FISHER RESEARCH LABORATORY, INC.
PALO ALTO CALIF.

INERTOL® COATINGS protect "Miss Liberty"

● Long, durable protection was needed for the inside of the Statue of Liberty. Inertol maintenance coatings were used. This way, lasting protection and a gleaming, beautiful finish were assured.

Inertol makes a complete line of industrial maintenance paints—such as the rugged coatings used on the Statue of Liberty and Inertol's new rust-stopping RUSTARMOR®. This amazing new paint can be applied directly to sound rusty metal—no expensive sandblasting is necessary. Never gets sticky — it's hygroscopically controlled. Comes in eleven attractive colors.

For detailed answers to your painting problems, write for FREE folder and color chart CA-2 today. No letter required. Just tear out this page and clip it to your firm's letterhead. Jot down your name and title and mail.

INERTOL CO., INC.
Maintenance Paints Division
435 Frelinghuysen Ave., Newark, New Jersey
27-M South Park, San Francisco 7, California
Inertol Protection Means Lower Maintenance Costs

A typical city's comment*

"The Hydro-Clam Digger has exceeded our expectations of versatility; has been very satisfactory; and has resulted in material savings of time and money in the planting operations of this Department. We have found that the Clam Shell and the Back Hoe attachment can be interchanged by our operator, with a helper, in approximately twenty minutes. The Back Hoe has been able to remove up to 12 inches of frost, which would have been impracticable to do by hand."

Shawnee HYDRO-CLAM

- Digs through hard asphalt and frozen ground 8½′ deep
- Ideal for spot excavations
- Adaptable to most all tractors
- Loads trucks—⅓ yd. Clam Capacity

Purchase this machine for less than the cost of excavating jobs. All hydraulic operation. Digs straight down, from square corners and level bottom of excavations.

CONVERTS TO BACK HOE IN MINUTES FOR TRENCHING TO 9½′ DEEP—ONE MACHINE FOR TWO OPERATIONS!

464 * name on request

SHAWNEE MANUFACTURING CO.
1947-U. N. Topeka, Topeka, Kansas

EASTERN METAL 1 Source of Supply For ALL Metal Signs

You get these Advantages:

Immediate Delivery — over 1200 Types in Stock
Legible Lettering — Modern Designs
Official Legends — Approved by Dept. of Commerce
Long Lasting — Double baked enamel
Economy — Low cost; easy to install and maintain

"Iron Cop"

Protect Your Children with the Eastern Metal "Iron Cop"—6-ft. 4" Policeman silhouette in an official blue uniform mounted on a stable iron base; rolls into position easily by a school boy.

Eastern "A" Stand

Complete line of Highway Signs—reflectorized and plain; also heavy cast aluminum street signs, U-Type steel posts, and durable stanchions.

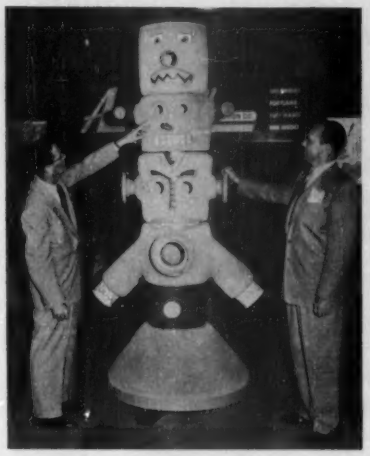
Send for Illustrated Folder and Price List.

Eastern "A" Stand
Won't Blow Over
Folds and Locks in Place
Positive Protection to City Workmen

INDUSTRIAL • SAFETY
EM SIGNS
UTILITY • TRAFFIC

EASTERN METAL of Elmira, Inc. Elmira Hts. 1, N. Y.

AWWA Sees Concrete Cylinder "Totem Pole"



Jack Watson (left), advertising manager of the American Pipe and Construction Co., Los Angeles, Calif., explains the construction of this concrete cylinder "Totem Pole" to Gordon Scott, a sales member of the firm's Portland (Ore.) plant.

To demonstrate the way in which special fittings can be built into regular sections of American concrete cylinder pipe, the AMERICAN PIPE AND CONSTRUCTION Co., dazzled visitors at the recent AWWA Convention in Seattle with this brightly colored "Totem Pole."

The pole, fitted together with five bell and spigot sections, utilized a "reducer" as a base, and was painted with bright, primary colors. It was fabricated at the company's South Gate (Calif.) plant. Main offices of American Pipe and Construction are in Los Angeles.

Company Moves Sales Offices

Sales and service facilities of ST. PAUL HYDRAULIC HOIST have been moved from Minneapolis, Minn., to Mattoon, Ill., according to a recent announcement. The firm's manufacturing operations were moved to the Mattoon plant some months ago.

Among the products offered by this company are combination dump and platform bodies, farm hoists, and Pax-all refuse collection bodies.

Portable Microfilming Machine

A low-cost, portable microfilming machine, combining recording and reading in one unit, is introduced by John S. Coleman, president of the Burroughs Corp., and Charles H. Percy, president of the Bell & Howell Co.

"Microfilming," reports Mr. Coleman, "provides not only safe, convenient and space-saving storage of records, but is especially valuable as a time and money saving device for creating easily handled duplicate records."

According to Mr. Percy, "For the first time, all microfilming functions have been combined in a single 'table-top size' unit. The Micro-Twin will record documents smaller than bank checks up to single sheets 11 inches wide and 3,700 feet long, photographing both sides. A system of mirrors is used to record the face and reverse sides at the same time. The machine will photograph documents intermixed in size just as fast as they can be fed into it."

Complete information on the new microfilming machine is available from the BURROUGHS CORP., DETROIT 32, MICH. Write directly, or you may use the Post Card located for your convenience on the colored page in this section. Circle No. 961.

WHEN ORDINARY STREET SIGNS "JUST FADE AWAY"

TASSCO SIGNS STAY CLEAR & BRIGHT

Tassco Street Signs are visible proof that the best economy is in the best quality!

Long after ordinary street signs are more hindrance than help, Tassco signs remain fresh and readable. That's because many, many years of specialized experience in designing and manufacturing signs are behind every Tassco sign!

Tassco Street Signs offer your community better appearance and more legibility for longer... regardless of location, climate, type of mounting, or limiting ordinances. They are available in all standard designs, any special design, and as replacements of your present signs. Plates of any size or shape can be furnished in both alodined aluminum or bonderized steel, and in baked enamel or reflectorized finish.

THE TASSCO TOMCAT

Functions day and night! New, teardrop shape provides correct eye angle. Tamper-proof, durable, permanent. The Tassco Tom Cat is all aluminum, weatherproof, boltless, with lasting reflectivity... yet costs no more than framed porcelain enamel or embossed signs.

WRITE FOR COMPLETE TASSCO CATALOG

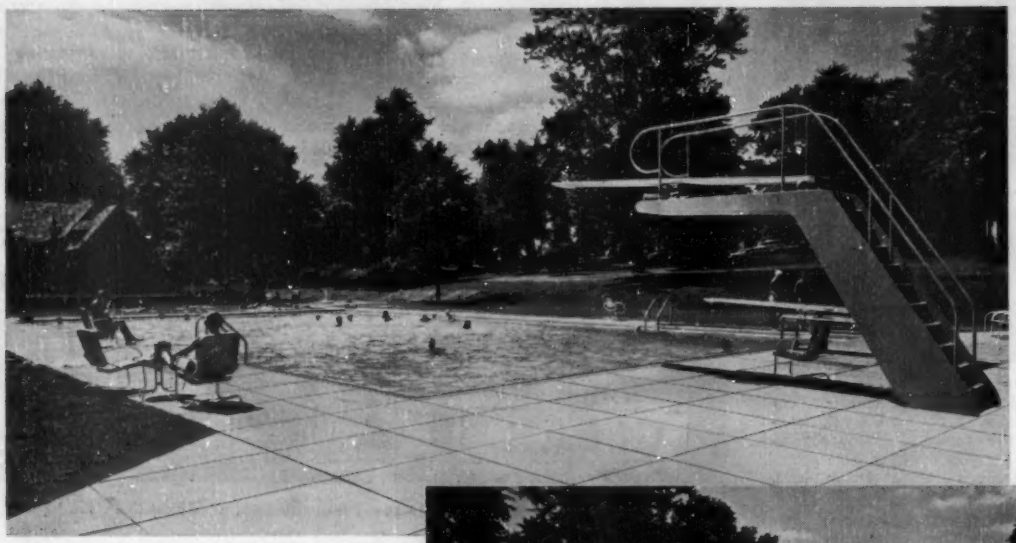
The Sign of TASSCO Traffic Safety

TRAFFIC and STREET SIGN COMPANY

84 FOUNDRY STREET • NEWARK 5, N. J.

Value– MORE FOR EACH DOLLAR

in beauty, permanence, low upkeep!



P•DM All-Steel Swimming Pool, 82'4" x 45'; Oakmont Country Club, Pittsburgh, Pa.

All-Steel

SWIMMING POOLS

by

PITTSBURGH • DES MOINES

In appearance, low maintenance and trouble-free long life, modern Pittsburgh-Des Moines All-Steel Swimming Pools provide top value for municipality, club or estate. Smooth-surfaced, sanitary, proof against cracking, these advanced-design pools are widely popular, time-tested, require but periodic painting for good-as-new permanence. Write!

PITTSBURGH • DES MOINES STEEL CO.

Plants at PITTSBURGH, DES MOINES and SANTA CLARA

Sales Offices at:

PITTSBURGH (25) ..... 3412 Neville Island	DES MOINES (8) ..... 913 Tuttle Street
NEWARK (2) ..... 215 Industrial Office Bldg.	DALLAS (1) ..... 1217 Praetorian Bldg.
CHICAGO (3) .. 1216 First National Bank Bldg.	SEATTLE ..... 520 Lane Street
LOS ANGELES (48) ..... 6399 Wilshire Blvd.	SANTA CLARA, CAL. ..... 619 Alviso Road

Two Texas highway patrol officers are ready for duty in Ford's new 1954 police car.

Favorite Police Car

Ford's new safety enforcement vehicle, the Interceptor police car, has improved acceleration nearly 20% over the 1953 model, and is capable of speeds over 100 mph. It is available only to law enforcement agencies.

The company has been supplying special police vehicles for the past 22 years and at present, 56% of the nation's police cars are Fords. The favorite for urban police has either a 115-hp 1-block Six or a 130-hp Y-block V-8 engine.

To meet the rigorous demands of police work, where high performance and safety are prime factors, the Interceptor police car has been constructed with a heavy-duty clutch, and heavy-duty brakes. To provide the extra electrical power needed to operate police radios, sirens, and special lights, the vehicle may be obtained with a 40, 50 or 60 ampere generator, or 50, 60 or 95 ampere alternator.

For complete specifications, write the Ford Div., Ford Motor Co., P. O. Box 638, Dearborn, Mich., or you may use the Post Card on the colored page in this section. Circle No. 956.

Foxboro Builds Pittsburgh Factory

The Foxboro Co., manufacturers of measurement and control instruments, announces the erection of a new branch factory in Pittsburgh, Pa. Located at 2270 Noblestown Rd., it is expected to double the company's instrument assembly, service and repair facilities. The factory will be headed by A. H. Shafer, district manager.

Foxboro's newest factory is the second of three to be erected by the company this year. A new plant in Dallas, was opened recently, and another in San Leandro, Calif., will be ready for occupancy this month. Main offices of the company are in Foxboro, Mass.

SODIUM SILICOFLUORIDE

(Fluosilicate)

Inquiries Invited!

TENNESSEE TC CORPORATION

1028 Connecticut Ave., N. W.
WASHINGTON 6, D. C.

MATCH THIS SAFETY RECORD!

OVER 26 YEARS WITHOUT A FATALITY

The City of Minneapolis works very hard to maintain its 26-year safety record of no fatalities at organized school crossings. Look at the intensive program behind this record:

It takes crisp signs to command the obedience of traffic, so every fall new or freshly painted signs go up at or near every school crossing.

Important, too, police and school patrol supervise traffic at these crossings; newly painted lines go down on streets yearly; obstructive trees and shrubs are trimmed to permit full visibility of signs, and every summer sign support posts are repainted.

Let Lyle school signs help you promote such safety in your community. Write today for illustrated Lyle sign catalog.

LYLE SIGNS, INC.

2720 UNIVERSITY AVENUE, S. E.
MINNEAPOLIS 14, MINNESOTA

...when speeding is your urgent traffic problem

Fast drivers are not only a menace to themselves and other motorists, but they also tie up valuable men in traffic control duty.

Speed Watch is the new electrical timing **system** that "clocks" speeders and actually reduces excessive speeding...first day in operation. Speed Watch is compact and fully portable... permitting set-up and effective operation by a single officer. The spare man can be reassigned!

Request additional information on coupon below. No obligation.

TRAFFIC HOUSE, INC.
202 NATIONAL BANK BLDG.
DECATUR, ILLINOIS

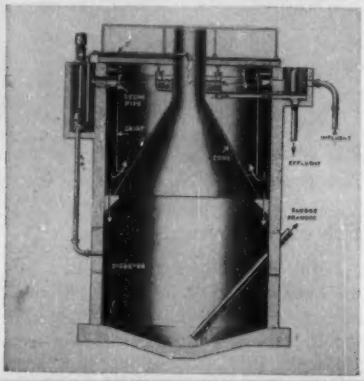
Gentlemen:
Please send Speed Watch Folder Number 16

NAME _____
ADDRESS _____
CITY _____ STATE _____
TITLE _____

A Practical Sewage Plant for the Small Community -The SPIRAGESTER

The Lakeside Spiragester gives the small community a sewage treatment plant combining the best in engineering with bargain prices. It provides a self-contained plant that your community can afford.

- **It is simple**—It places Lakeside's Spiroflo Clarifier over a digestion tank. It combines the simplicity of an Imhoff tank with flexibility and control that no Imhoff tank has. Note the drawing below.
- **It is engineeringly sound**—Operating on proved principles of clarification and separate sludge digestion. You aren't risking your community reputation with an untried experiment.
- **It is easy to operate** There are no intricate expensive mechanisms to get out of order.
- **And it is farsighted**—When your community grows, as it surely will, and you have to build a larger plant, you can put a floating cover on the Spiragester and turn it into a digestion tank, and then use our Spiroflo Clarifiers for separate primary settling.



Get the full story of the Spiragester by writing for additional information. If you have a larger plant that needs improvement, our engineering department will be glad to help you without obligation. Just drop us a note:

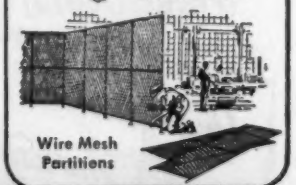
LAKESIDE ENGINEERING CORPORATION
222 W. Adams St. Chicago 6, Ill.

Public Property *PROTECTION* is our business

For your protection Stewart produces chain link wire and iron picket fence; wire mesh partitions; wire window guards; steel folding gates. Also flagpoles; settees; bronze plaques and other metal specialties. Write for catalogs. Please mention products in which you are especially interested.

THE STEWART IRON WORKS CO., INC.
2121 Stewart Block, Cincinnati 1, Ohio
Experts in Metal Fabrications since 1886

No. 370 Settee


Wire Mesh Partitions

Stewart IRON and WIRE FENCES

New Food Waste Disposer

A new kitchen food waste disposer features a sealed-tight motor to exclude moisture, sanitary design, stationary cutting teeth that keep straying hands from being injured, and 992 cutting, crushing, and shearing actions per revolution.

An innovation in the manufacture of disposers is the built-in centrifugal pump which creates a vacuum action that sucks waste material through cutting teeth, and expels waste with sufficient pressure to keep the drain pipe clean. The machine pulverizes banana peels, corn husks, and rags.

For an illustrated folder discussing the Disposalux, write the DIAMOND MACHINE TOOL CO., 5111 COFFMAN-PICO RD., PICO, CALIF., or you may use the Post Card in this section. Circle No. 957.

New Valve Types Gain Favor

Water-works designers are busy rewriting their specifications to include the improved butterfly valves and ball valves, according to the records of the S. MORGAN SMITH CO., YORK, PA.

The most pronounced of these small-scale engineering advances has been in the use of butterfly valves in water treatment plants. Their quick action in key points such as the influent, effluent, and drain lines of the filters, is making the life of the plant operator much less difficult. The present rubber-seated valves are proving virtually drip-proof under all normal plant operating conditions. In installations subject to excessive heads or high water velocities, a heavier butterfly valve, seated on babbitt metal, is proving strong enough to meet all requirements.

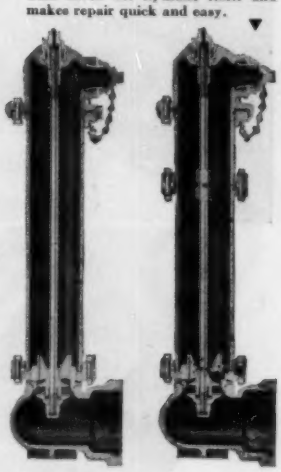
Ball valves are winning favor in distribution systems. These fast-acting valves are often placed in strategic spots in the system. Because of their great strength, they can be operated to stop a full head of water quickly in case of a line break. With the conventional gate valves, the repair crews often have to "valve down" several valves gradually, in order to close the line and isolate the break.

According to S. Morgan Smith officials, ball valves for distribution work are currently being carried in sizes ranging from 16 to 36 inches. For complete information, write the company directly, or you may use the Post Card on the colored page in this section. Circle No. 976.

Friction's needed for a match but it's no help in a fire hydrant

Friction causes loss of water pressure and reduces the effectiveness of fire-fighting equipment. That's why R. D. Wood Hydrants are designed to cut friction way down—and why so many communities rely on them for fire protection.

The R. D. Wood Hydrant can be furnished with breakable flange and stem coupling at extra cost. Both are built to break with a heavy blow. This saves the hydrant itself and makes repair quick and easy. ▼



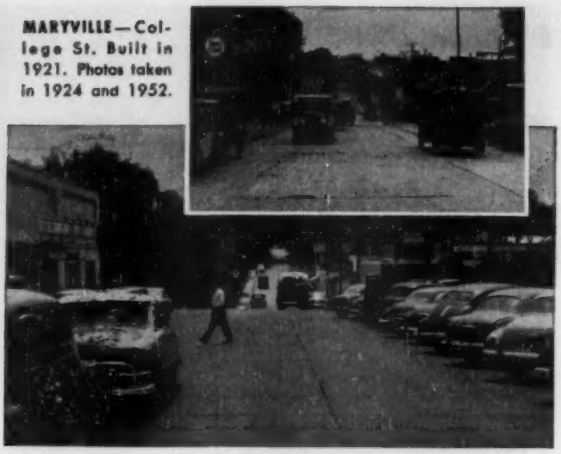
THE R. D. WOOD SWIVEL JOINT HYDRANT ▶
All internal parts, including drain valve seat, removable through barrel • all-bronze stuffing box • completely revolving head • compression-type valve, cone shaped to prevent water hammer • automatic drain valve • bronze main valve seat screws directly into elbow with straight, not tapered threads • mechanical-joint pipe connections if specified

R.D. Wood Swivel Joint Hydrants

Public Ledger Building, Philadelphia, Pa.

Manufacturers of "Sand-Spun" Pipe (centrifugally cast in sand molds) and R. D. Wood Gate Valves

MEMPHIS—N. Willett Street—oldest concrete pavement in Tennessee. Built in 1912. Photos taken in 1924 and 1952.



MARYVILLE—College St. Built in 1921. Photos taken in 1924 and 1952.

Here today—*and still here tomorrow*

that's the story of

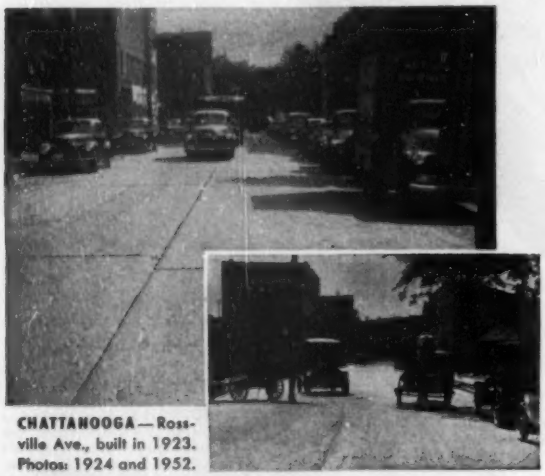
Tennessee's CONCRETE streets

Throughout the "Volunteer" state, motorists, taxpayers and city officials can be proud of their old concrete streets. Many, like those shown here, have served more than 30 years and are still giving good service.

These concrete streets have required little maintenance. They are true ***low-annual-cost*** pavements—a fact that's important to taxpayers, who foot the bills.

Such durability and ***low annual cost*** are typical of concrete pavements all over America. In addition, concrete is the safest pavement. Its gritty, skid-resistant surface permits quick stops—rain or shine. And concrete's light color provides maximum visibility at night.

For more information on designing and building durable, safe, ***low-annual-cost*** concrete streets write for free, helpful literature. Distributed only in the U. S. and Canada.

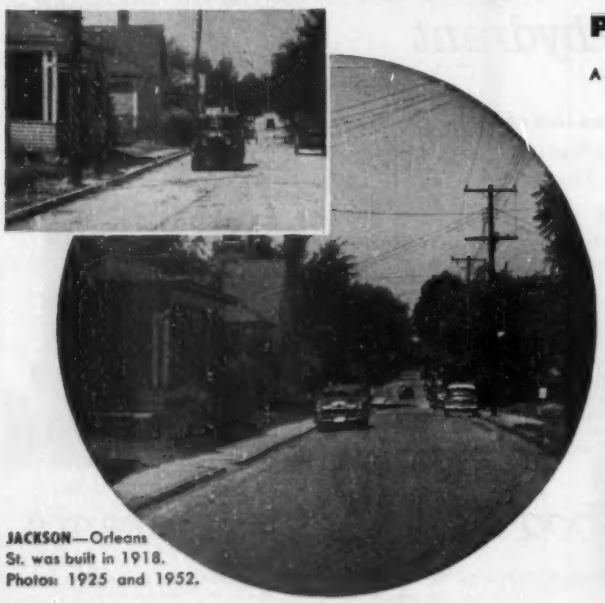


CHATTANOOGA—Rossville Ave., built in 1923. Photos: 1924 and 1952.

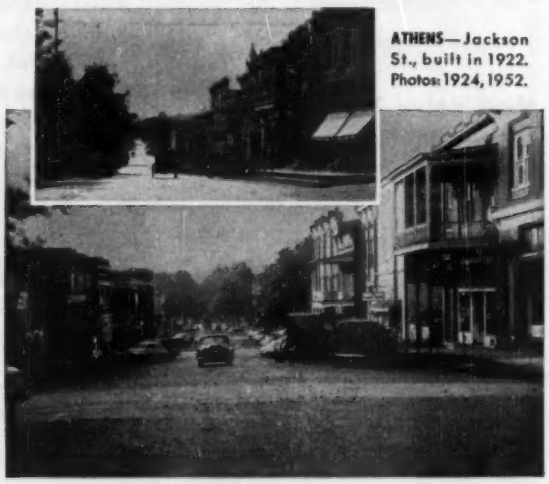
PORTLAND CEMENT ASSOCIATION

Dept. 8-4, 33 West Grand Avenue, Chicago 10, Illinois

A national organization to improve and extend the uses of portland cement and concrete . . . through scientific research and engineering field work

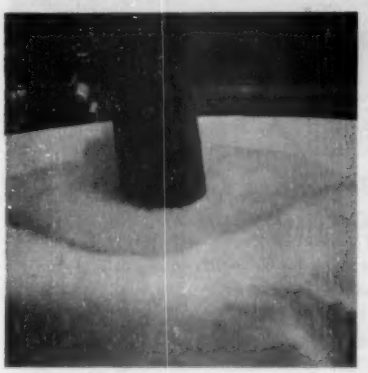


JACKSON—Orleans St. was built in 1918. Photos: 1925 and 1952.



ATHENS—Jackson St., built in 1922. Photos: 1924, 1952.

New Foam Fights Fire More Effectively



Unox fire-fighting foam is applied at a single point on top of the tank.

Large scale fire tests of foam made with Unox penetrant, already known to city officials as water wetting agent, were conducted recently on a 55,000-gallon storage tank.

Unox foam is designed to protect any size storage tank for chemicals, petroleum products, or liquefied petroleum gas, especially in manufacturing areas that have been left unprotected because of the high cost of installing water spray systems.

The technique involves the aeration of a solution of 1% Unox fire-fighting penetrant. Having about 10 times the volume of the original solution, the foam can be applied to almost any fire except a live electrical one, to result in prompt extinguishment.

Unox fire-fighting penetrant is an original development of Carbide and Carbon Chemicals Co. It has been approved by the Underwriters' Laboratories and for several years has been used by municipal and industrial fire departments. It is currently being distributed by the UNOX CO., DIV. OF MCFARLAND MFG. CORP., HOUSTON, TEXAS. For full details, write the Unox Co., or use the Post Card in this section. Circle No. 951.

Cities Spend Less to Unload and Store Salt

Snow removal and ice control promise to be put on a more efficient basis with the help of a new air-actuated system for unloading and storing salt.

The Beaumont Birch system requires an air-tight bin built to withstand a partial vacuum. A pneumatic conveyor hose is connected to the top of the bin. The pick-up end of the hose, in the car, is equipped with a gulper tool or pick-up nozzle. Material is picked up by a high velocity air stream entering the mouth of the tool, and is conveyed through the hose to the bin where expansion of conveying air reduces the velocity. The material drops out of the conveying air and is deposited in the bin.

The flow of air, under negative pressure or partial vacuum, through the conveyor hose and bin, is induced by an exhauster of the steam venturi type or motor driven rotary positive type.

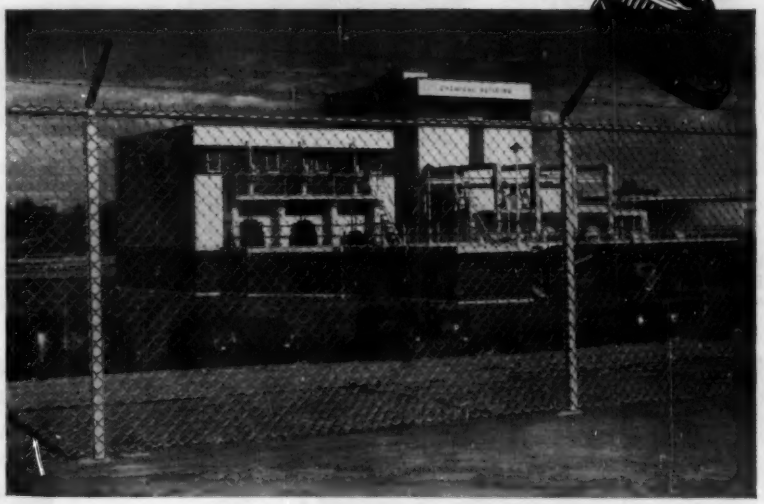
If a steam exhauster is used, the conveying air and steam are discharged into an air washer before discharge to atmosphere.

If a mechanical exhauster is used, the conveying air is washed before entering the exhauster and then discharged to atmosphere.

Additional information is available from the BEAUMONT BIRCH CO., 1501 RACE ST., PHILADELPHIA, PA. Write, or you may use the Post Card located for your convenience on the colored page in this section. Circle No. 962.

REALOCK FENCE

saves you money



. . . **Saves cost of extra guard personnel**

. . . **Cuts cost of ground maintenance**

. . . **Cuts down pilferage losses**

. . . **Makes possible lower insurance rates**

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BRANCHES IN ALL KEY CITIES

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Our covers will pass the test specified by the National Board of Fire Underwriters. Shuredry Green-Bak Salvage Covers carry the approved symbol of the Associated Factory Mutual Fire Insurance Companies.

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The flow of traffic may be smooth and well-regulated when approaching and going through a tunnel...but does it cause bottlenecks elsewhere? To prevent such hazardous situations you must know —How many? What direction? What type?—For the simple, economical and accurate solution—

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Now being used in hundreds of municipalities in the United States. For details write Dept. AC-9.

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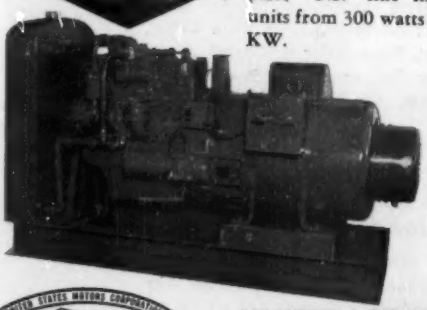
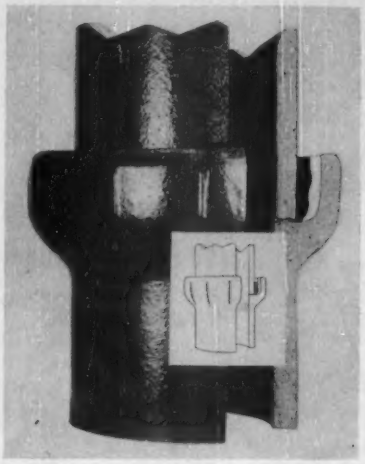
take the DISASTER out of Power Failures with this

A "U.S." Standby engine-generator is your best protection against loss due to power failure. The complete "U.S." line includes units from 300 watts to 200 KW.



UNITED STATES MOTORS CORP.
353 Nebraska St.
Oshkosh, Wis.

Quickly Installed Sewage Lines



Cast rings, molded to the pipe, are of plasticized resins of polyvinyl chloride.

Using the new Amvit joint, sewage works can install a 50-foot line of vitrified clay pipe in only 15 minutes. Simply moisten the joint with plain water, line up the bell and spigot, and secure the joint.

A push type joint based on the ball-and-socket principle, the Amvit joint consists of a plastic ring die, cast electrically in the bell of the pipe having a concave exposed surface. Also a plastic ring die cast electrically on the spigot having an exposed convex surface. The diameter of the spigot is larger than the largest diameter of the bell ring. When the two are pushed together, the rings are in constant compression so that the joint is both root-proof and infiltration-proof.

The Amvit joint may be used with clay pipe with inside diameters of 4- to 8 inches. It is made by the AMERICAN VITRIFIED PRODUCTS CO., CLEVELAND, OHIO. For further data, write the company directly, or you may use the Post Card that is located for your convenience on the colored page in this section. Circle No. 973.

BRAXMAR BADGES

Standard Badges Since 1879

Write for catalog illustrating badges for Police, Fire and other City, County and State Officials
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This 33 x 45 ft. AERO photo-mosaic gives Philadelphia Electric Co. officials quick, up-to-date answers to engineering problems throughout a 4 county service area. Formed from 806 precise aerial photos, it provides detailed coverage for 2340 sq. mi.

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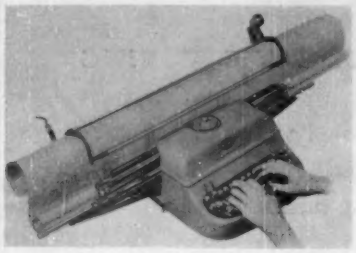
Drafting Lettering Machine

The Vari-Typer Engineering model is designed to letter-up tracings of 12 feet or more in length as well as small, letterhead tracings.

Types are instantly changeable in various styles and sizes, incorporating the popular sans-serif drafting styles. Each character is independently and uniformly



imprinted on the tracing with a sharp opaque inking.

For descriptive literature and specimens, write the RALPH C. COXHEAD CORP., 720 FRELINGHUYSEN AVE., NEWARK 5, N. J., or you may use the Post Card on the colored page in this section. Circle No. 959.

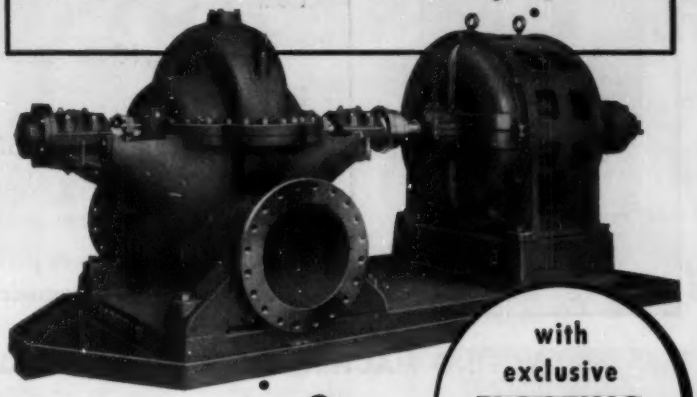
FOR SALE

One Used Ideal Electric Motor

Synchronous Motor & Generator on Base 4000 Volt 1200 R. P. M. 175 horse power 60 Cycle.

For further information call Lyons 3-2027 or write Water Commission, Lyons, Illinois.

Minimum Leakage provides Maximum Efficiency



with exclusive FLOATING SEALING RINGS

Morris

Horizontally-Split Double-Suction WATER PUMP

In a centrifugal pump the running joint between the impeller and the pump casing is a highly critical point. Since it operates under suction vacuum on one side and discharge pressure on the other, excessive leakage will adversely affect efficiency.

Morris' exclusive *Floating Sealing Rings* reduce this hazard. As the pump comes up to speed, the Floating Sealing Rings adjust themselves to a concentric close-running clearance around the impeller. When full speed is reached, internal hydraulic pressure forces the rings tightly against the precision-machined faces of the casing rings where they are held firmly in place. Leakage is kept at a minimum—initial efficiency is maintained for extremely long periods of service.

Built to Last Longer

There's no scrimping of materials in the construction of this pump. All parts are extra-heavy—intentionally—to withstand many more years of severe operating conditions.

Morris Horizontally-Split Double-Suction Pumps are built in sizes ranging from 2" to 20", and may be connected in series on a single bedplate for heads exceeding those which can be developed by a single pump. For further information, contact the Morris office nearest you or write for free Bulletin 179.

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Sales Offices in Principal Cities

MORRIS *Centrifugal Pumps*

PROGRESS SUGGESTS VOTING MACHINES

Greater speed, increased comforts, and advantages are the constant demands of a swiftly moving civilization. The results are seen on every hand in the progress of this generation.

The VOTING MACHINE belongs to this age. It typifies progress.

The successful use of AUTOMATIC VOTING MACHINES in more than 6,000 cities and towns from New York to San Francisco has created a demand elsewhere among voters as well as public officials. Every election adds to the number of communities using them.

VOTING MACHINES ARE ECONOMICAL AND DEPENDABLE

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TOWER CUSTOM BUILT SWIM POOL

"T" SHAPE ALL STEEL POOL DESIGN PROVIDES

Greater Efficiency and Safety ..... A Packaged Installation

- RAPID INSTALLATION
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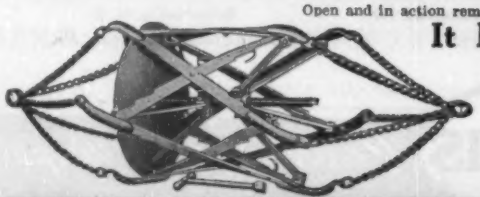
EXPANDING ROOT CUTTER & SEWER CLEANER

Open and in action removing roots and caked sediment like this.



It Fits in on Every Sewer Cleaning Job

Adjusted in 30 seconds to fit any sewer from 8 to 30 inches.

Will clean the entire sewer wall, top, and sides as well as the bottom, cutting and removing the roots and caked sediment, putting the sewer system in almost 100% clean condition.

Write for our new catalog on complete sewer cleaning equipment.

EXPANDING SEWER MACHINE COMPANY

108 East Walnut St. **Nappanee, Ind.**

New Snow Loader Attaches to Grader

Attach this snow loader unit to the moldboard of any Caterpillar No. 12 or No. 112 motor grader. Designed by Rivinius, Inc., the loader fastens to the moldboard at a 90-degree angle, forcing snow to feed into the blower in a straight line. Hydraulic power changes the angle of the blade to conform to various operating conditions. Snow and ice are bladed into the power-driven fan, after which they are blown directly into the dump truck or blown to one side.

According to Rivinius, Inc., the blower reduces the snow bulk 25 to 50% to cut down trucking costs. Windrowing is eliminated, and the snow is handled only once. Moreover, the operator enjoys full view of the entire snow removal operation.

For complete information write directly to RIVINIUS, INC., EUREKA, ILL., or you may use the Post Card that is located on the colored page in this section. Circle No. 978.

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In polished brass or aluminum; Roman styles in ½" to 6" heights; HyCaste Condensed in 4" height, and Deluxe plaque style in 4" height.

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YOU CAN'T GO WRONG
WITH

The pioneer self-caulking material for cast iron bell and spigot water pipe which, for more than 50 years, has shown water works men how well it makes a good tight joint that improves with age.

THE LEADITE COMPANY
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Every Step of the Way.

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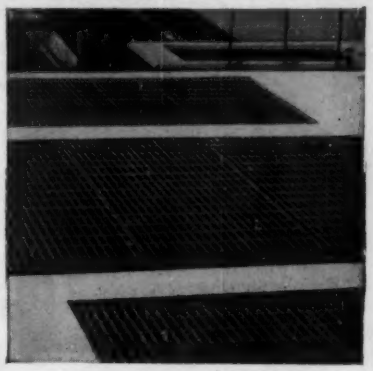

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Specify IRVING GRATING for:

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ESTABLISHED 1902

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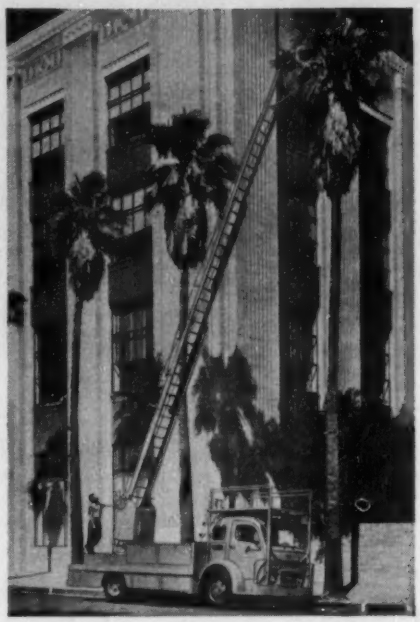
NEW TRANSPORTATION IDEAS

The WHITE MOTOR Company
Cleveland 1, Ohio

White

Long Beach now trims palm trees by WHITE 3000

VERSATILE White 3000 fills a wide variety of needs in municipal service—even to Palm tree trimming in Long Beach, Cal. This White has 48-foot "Sky Ladder" swivel-mounted. Short wheelbase and outstanding maneuverability of White save time... add safety on the high jobs.

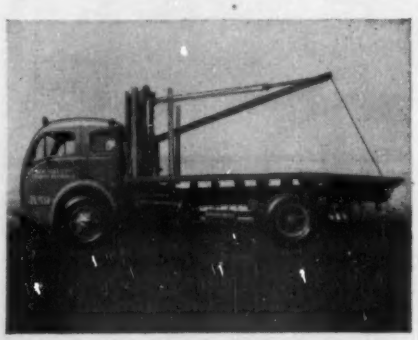


Speed Reno street flushing with WHITE 3000 tanker

MOST EFFICIENT street flusher in the business because of its driving ease, visibility and maneuverability... short turns and safety. That's what folks in Reno, Nev., say about the White 3000. Residents like the service so much Washoe County also have White 3000 in county highway flushing service.

WHITE 3000 speeds track laying job

SAVES TIME in track laying on busy city streets in New York. This White 3000 is engineered for outstanding maneuverability. Very favorable weight distribution of the 3000 also helps handling the track speedily.



WHITE 3000 mobile food distribution unit

EXTRA CAPACITY body and really short overall length increases capacity and saves driving time of this modern mobile food distribution unit—a White 3000—used in Los Angeles, Cal., for school cafeteria transportation of foodstuffs from central kitchen. Mobile steam tables keep food piping hot for seven cafeterias.

SEE YOUR WHITE REPRESENTATIVE FOR FACTS ABOUT THE ADVANTAGES OF WHITE SPECIALIZED DESIGN FOR YOUR APPLICATIONS

TIME-O-MATIC

FLASHERS

JACK MOUNTED

Single or two circuits with or without built-in eliminators. Available with standard meter case or can be supplied separately with Jack mounting panel.

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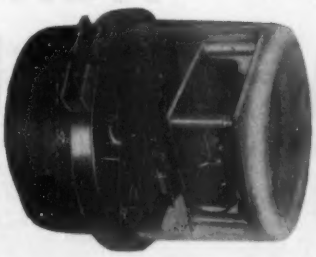

A SIGN OF GOOD CONTROL

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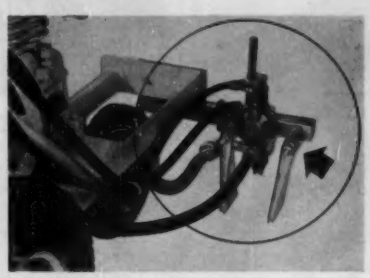
1106 Bahls Street

Danville, Illinois

Purchasing

Striping Gun Expedites Zone Marking



New striping gun is designed to operate on about 25% less compressed air.

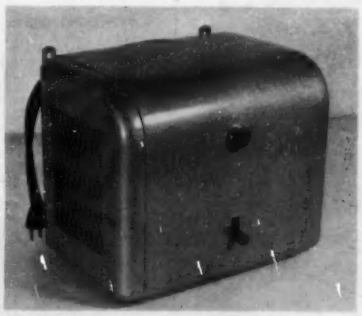
THE KELLY-CRESWELL CO., XENIA, OHIO, is installing a new automatic striping gun on its highway and industrial zone marking equipment.

The gun, also available as a replacement part, is diaphragm-operated, eliminating the need for an air cylinder and upper packing gland. It operates on about 25% less compressed air than ordinary striping guns, and requires less maintenance and minimum cleaning.

For complete information on this automatic striping gun, address the manufacturer directly, or you may use the Post Card on the colored page in this section. Circle No. 966.

Portable Battery Charger

A new regulated battery charger, charges truck batteries right in the field. Devised for use with an Onan A. C. electric generating plant, this compact charger draws its A. C. input power



from the electric set, takes over the D. C. load, charges the 6-volt storage battery and provides up to 25 amperes for powering the 2-way radio equipment.

For full details, write D. W. ONAN & SONS INC., 8364 UNIVERSITY AVE. S. E., MINNEAPOLIS 14, MINN., or you may use the Post Card on the colored page in this section. Circle No. 965.

WET hands can be dried

....**THOROUGHLY**

....**MOST ECONOMICALLY**

....**CHAP FREE**

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AUTOMATIC SERVICE 24 HOURS A DAY

at the touch of the Starter Bar of the

NEW "C" MODEL

Electric Aire HAND DRYER

BUILT TO DRY MILLIONS OF HANDS

with "low-cost" electricity and "no cost" air!

AVAILABLE — COMPLETE DETAILS

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In the Palm of Your Hand...

the answer to your sanitation problems

SOLAR...
the original and still the BEST

Solar—the self-closing waste receptacle is the solution to all your waste disposal problems. Solar has no springs, weights, or hinges—nothing to repair or replace. There is only ONE moving part—the free-swinging top. Silent in operation and built to withstand tough usage, Solar cuts cleaning costs, reduces fire hazards, is always safe to use. Send for free illustrated literature today. *Buy Solar And You Get The Best.*

SOLAR-STURGES MFG. DIV.
PRESSED STEEL CAR COMPANY, INC.
MELROSE PARK, ILLINOIS DEPT. 8-D

Please send me complete information about the new line of Solar Self-Closing Waste Receptacles.

NAME
FIRM NAME
ADDRESS
CITY ZONE STATE

SOLAR-STURGES MFG. DIV. Pressed Steel Car Company, Inc.

LONGER RANGE—TARGET VALUE FOR YOUR HIGHWAY TRAFFIC SIGNS WITH GROTELITE REFLEX REFLECTIVE SHEETING

Grotelite REFLECTIVE SHEETING

SMOOTH S S SURFACE

This highly reflective, smooth surface reflex reflective sheeting makes a smashing, attention-compelling sign with longer range target value and full range legibility. Easily read night or day. The smooth, durable, self-cleaning surface can be screened, sprayed or brushed. It is easy to apply and makes the best long life, economical signs and markers. Available in sheets and completed signs.

THE Grote MANUFACTURING CO., Inc.
GROTE SQUARE - BELLEVUE, KY.
(Established 1901)

STOP

Complete Line of Embossed Metal Traffic Signs, Reflectors and Street Name Plates

DEAD END

SIGNALS AHEAD

Hawkins Traffic SAFETI-BAR

Channelizes & Protects Vehicular & Pedestrian Traffic

Drivers who might be tempted to cross white lines RESPECT these HIGHLY VISIBLE, JAGGED-LOOKING, RAISED barriers! "Safeti-Bars" DO THE JOB of keeping cars and trucks in the lanes where they belong! However, If hit or crossed, they are strong enough to withstand the heaviest load impacts, and not so high as to create a hazard.

MANY USES:—"Safeti-Bars" are your "best bet" for protecting safety islands, preventing dangerous left turns, centerlining narrow bridges and tunnels, marking and channelizing parking lots, etc. EASILY INSTALLED:—With each "Safeti-Bar," securing pins and adhesive mastic are supplied. A special reflective coating is available at slight extra cost.

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Purchasing

A.C. for Dictating and Recording in Autos

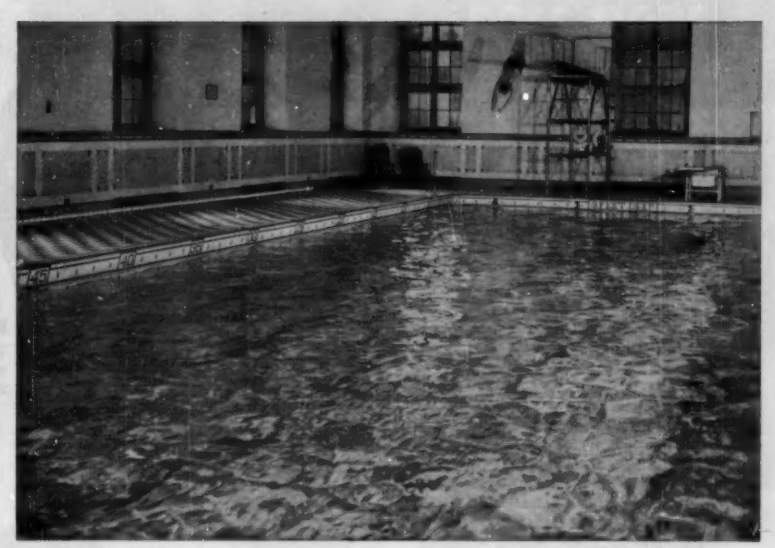
The ATR Inverter changes D.C. voltages of 6- to 220 volts to 110 volts A.C. It is specially designed for operating A.C. tape recorders, radios, radio test equipment, and public address systems.

Installed in a municipal automobile, the Inverter provides 110-volt A.C. current from the 6- or 12-volt D.C. battery. It can be mounted in the rear of the car or in the trunk compartment. With a tape recorder or dictating machine, the automobile becomes a municipal office in which to dictate field reports and reports of traffic accidents, fires, and rescue squad runs, thus saving time and later drudgery.

For complete details, write AMERICAN TELEVISION & RADIO CO., ST. PAUL 1, MINN., or you may use the Post Card in this section. Circle No. 964.

New Cash Register Records Faster

A multi-total cash register that has no lever or motor bar is available for remittance control over electric, water, and sewer bills, taxes, interest fees, and title fees. Made by The National Cash Register Co., Dayton 9, Ohio, it features quiet, single-cycle operation, providing faster recording with less wear. A slip-printing feature is being added.



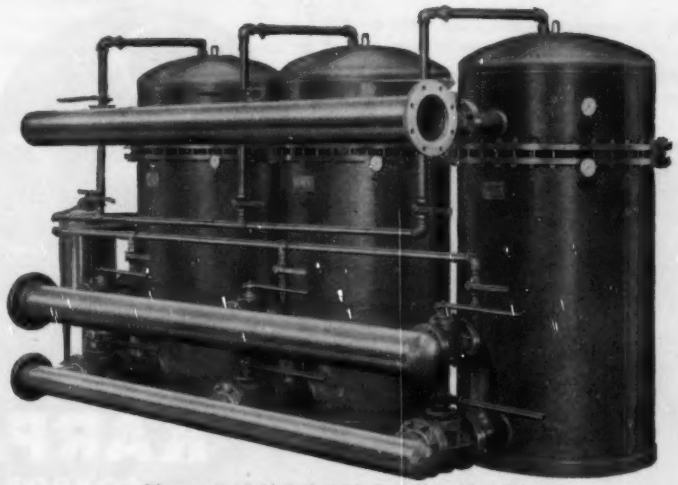
for lasting pool clarity with least manual care

Chances are, if you are concerned with the specification or performance of swimming pool filters, you know that the job is done best by diatomite filtration. But you may not know the vast difference in design, operation and cost among the several makes of filters employing a filter aid.

The new Adams SPF is identical in basic design to the Adams Poro-Stone filters that have met the high standards of industrial water filtration for nearly two decades. Now pool operators get for a moderate price, more filtering surface in less space, easiest possible operation and delivery virtually from stock. Range of filter capacities for small and large pools.

TODAY'S FINEST DIATOMITE Swimming Pool Filter

ADAMS SPF



Filter at Garfield Park Pool, Grand Rapids, Mich.

for further information, write to

R.P. ADAMS Co., Inc. 232 E. PARK DRIVE BUFFALO 17, N. Y.

The experience of many cities — large and small — throughout the nation, has proven that Karpark Meters will bring down the costs of traffic control. They'll bring yours down, too. Here's why —

❶ LOW-COST INSTALLATION — quick and easy. No skilled labor required.

❷ LOW-COST MAINTENANCE AND REPAIRS — made for accurate timing and rugged durability by the craftsmen who make famous Herschede clocks. Operate efficiently under all weather conditions with minimum service.

❸ LOW-COST LAW ENFORCEMENT — highly visible dial makes police officer's job faster, easier.

❹ LOW-COST COLLECTIONS — Karparks are available with automatic dump systems, sealable boxes or open top boxes and in a wide variety of coin combinations and time intervals.

DOWN

KARPARK TWIN-O-MATIC
Times two cars. Reduces maintenance and collection costs. Adjustable to any desired changes.

KARPARK UNIMATIC
For single car parking. Can be used for an entire system, or with TWIN-O-MATIC for special locations.

GOES THE COST OF TRAFFIC CONTROL

when you put these KARPARK meters on the job!

FOR COMPLETE DATA WRITE TO

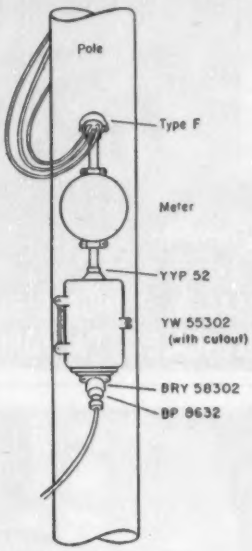
KARPARK
CORPORATION
Cincinnati 6, Ohio

IN CANADA
TWIN METER CO. OF CANADA LTD.
5002 Park Avenue
Montreal 8, Quebec

Developments in Condulets

Several new electrical product developments are mentioned in a recent Newsletter to Representatives of CROUSE-HINDS CO., SYRACUSE 1, N. Y., manufacturers of over 15,000 different sizes and types of electrical conduit fittings in addition to floodlights, traffic signals, and airport lighting.

A new, compact EMP explosion-proof miniature pilot light condulet for panelboards has been developed with a single flat joint cover in place of threaded cov-



ers. Deeper type condulets are being developed to accommodate push button switches and pilot light transformers.

An adjustable focusing mechanism has been added to type RCD-12 floodlighting fixtures with deflecting spread lenses. The proper position in which to place the focusing bracket for any desired width of lighted area for any given mounting height is explained in a focusing chart inside the fixture housing.

Cities having municipal electric systems should be interested in the arrangement shown in the sketch, which provides temporary power service at building construction sites. A 30-ampere fuse cut-out is used in the YW condulet for circuit protection. A type F service entrance condulet for looping wires into the meter, and BP8632 plug and cable to supply the load, complete the installation. Any building contractor could have a temporary pole and service connection made at a building site by making application to the electric department and paying a deposit which is refunded to him when he no longer needs the temporary service.

1 SCHIELD Bantam DOES MORE EARNS MORE

is the most versatile "tool" you can own!

Get rid of those expensive specialty rigs that are used only once-in-awhile. They run up equipment inventory costs, have high operating and maintenance due to lack of use -- present costly labor problems. With a mobile T-35 Carrier BANTAM or new C-35 Crawler BANTAM you've got a multi-purpose tool that lifts, excavates, trenches, pile drives, loads and unloads bulk material, pours concrete - does them all efficiently, quickly, at lowest operating and maintenance costs in the industry.

SEWER INSTALLATIONS

SPOT REPAIRS

STREET REPAIRS

LOOK WHAT A BANTAM DOES FOR YOU!

- 90 to 100 Cu. Yd. Hourly Production as a shovel.
- Lifts 10,000 to 12,000 lb. loads . . . booms up or down safely . . . accurately.
- Digs 100' of 5' trench per hour with Back Hoe.
- Loads out logs, pulp, rail ties and stringers, steel and other materials fast as crane with grapple or hook!
- Also works with pile driver, concrete bucket, magnet, backfiller, and clamshell.

LOOK WHAT OWNERS REPORT ON MAINTENANCE AND REPAIRS

- "Total maintenance cost of $60 to $70 for 2-year period on 2 Bantams."
- "Over 8 year period owning 4 Bantams total maintenance cost averaged $200 per year."
- "No maintenance or repair at all in 8 months' operation."
- "Total maintenance includes cables, bucket teeth -- total $100. No maintenance on basic units in 9 months."

ASK FOR FREE DEMONSTRATION NOW!

Let us prove to you that a Bantam can EARN MORE BECAUSE it DOES MORE!

MAIL THIS COUPON

SCHIELD Bantam COMPANY • 234 Park St., Waverly, Iowa, U.S.A. SB-AC-4

NAME_____ TITLE_____

COMPANY_____

ADDRESS_____

CITY_____ STATE_____

SEND ME INFORMATION ON:

☐ Re-manufactured Crane Carrier

☐ All New Crane Carrier ☐ Re-manufactured Truck Mounting ☐ C-35 Crawler

SEND INFORMATION ON THESE ATTACHMENTS:

☐ Clam ☐ Crane ☐ Concrete Bucket

☐ Back Hoe ☐ Dragline ☐ Pile Driver

☐ Shovel ☐ Backfiller ☐ Magnet ☐ Grapple

GOLDAK makes the world's finest LOCATORS

THE *Dualtronic* COMBINATION
PIPE & LEAK DETECTOR

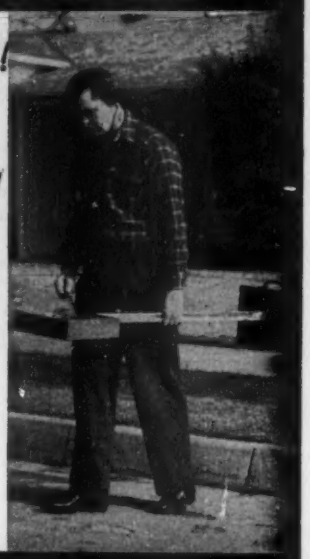
The "Dualtronic" is acclaimed by Municipalities and Utilities throughout the world, because of the time and labor savings effected by one instrument doing the work of two so efficiently and effectively. Ruggedly built! Lightweight! One man operation! The "Dualtronic" is the answer how to cut costs 50%!

Lightweight! Rugged!

GOLDAK
FEATHERWEIGHT MODEL 87
PIPE LOCATOR

Guesswork eliminated. Pinpoint location of pipes, mains, gates, tees, etc. One man operation, total weight 11 lbs.! Strong, positive location signal guaranteed by Licensed circuits and Microtuning, exclusive with Goldak. Lasts a lifetime, guaranteed performance.

Write for FREE literature!



The GOLDAK Company
Leading Makers of PIPE LOCATORS Since 1933

1544 W. GLENOAKS BLVD.
GLENDALE 1, CALIFORNIA

New O'Brien SEWERKING, equipped with solid rods.

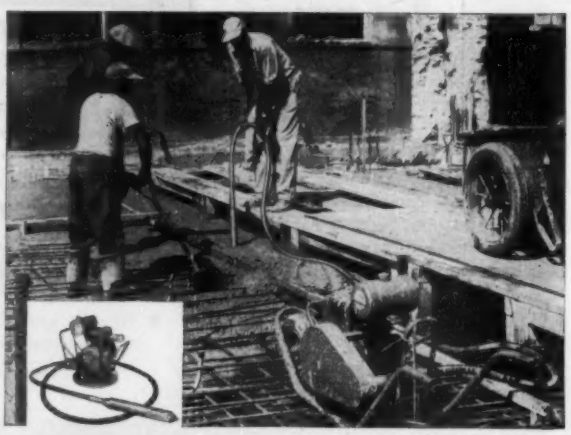
TWO MACHINES IN ONE!

Now—save money on sewer-cleaning equipment!

Here's the new O'Brien SEWERKING that can be used with flexible steel cable or solid rods! With this new machine, you can handle more sewer jobs—without paying for expensive, big machines. O'Brien SEWERKING is easy to operate: has a powerful, reversible electric motor (or can be used with gasoline engine) that turns cutting knives and cable to quickly clear line of roots, mud, etc. Cleans lines up to 14" in diameter, 500 feet long. Safe operation—no hand feeding of cable necessary.

WRITE TODAY FOR FREE BOOKLET

O'BRIEN Manufacturing Company
Dept. AC-8
5563 Northwest Highway
Chicago 30, Illinois



WHITE VIBRATORS OFFER LOWER OPERATING COSTS

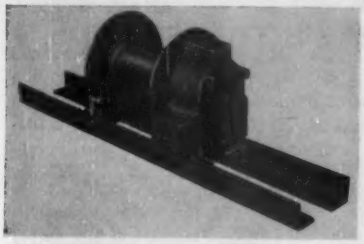
INITIAL PRICE IS LOWER • ALL DRIVE SECTIONS ARE INTERCHANGEABLE • ALL VIBRATOR HEADS ARE INTERCHANGEABLE • LENGTH OF DRIVE IS UNLIMITED • ENGINE OR MOTOR POWER UNITS ARE OF STANDARD MANUFACTURE • MINIMUM OF SPARE PARTS REQUIRED • BACKED BY 20 YEARS OF SUCCESSFUL USE

For FREE circular, write—

ELKHART 1 White Mfg. Co. INDIANA

New Truck Winches

Two new 7,000-pound truck winches for standard and low mounting have been designed for use on municipal utility trucks. Model 7S, a standard mount winch, is available for installation behind truck cabs. A low mount winch,



Model 7L, is mounted either in front or at the rear of the truck chassis or behind the cab. The Model 7L permits the entire truck platform to be used for the payload.

Introduced by Gar Wood Industries, both the 7S and 7L are worm gear, jaw-clutch drum type winches, constructed for slow, heavy pulls with intermittent operation. A lubricated clutch is enclosed in the gear case for longer wear. The cast-aluminum gear case house allows faster dissipation of the heat generated during operation.

Write the Customer Service Dept., Gar Wood Industries, Inc., Wayne Division, Wayne, Mich., or use the Post Card in this section. Circle No. 968.

Punched-Card Municipal Accounting

Punched card procedures are speeded with Remington Rand's Multi-Control reproducing punch. It does the work of several machines, handles 6,000 to 12,000 punched-cards per hour, and saves time and money in tax and payroll accounting, preparation of statistics, and in other punched-card applications.

Detailed descriptions of the punch's functions—feeding, sensing, computing, punching, segregating, and interfiling—are contained in *TM-817*, a new 6-page folder from Remington Rand Inc., 315 Fourth Ave., New York 10, N. Y. Write directly, or use the Post Card in this section. Circle No. 953.

Kill the ROOTS and you kill the WEEDS!

NEW Dolge N P Weed-Killer

Can be used with confidence by anyone. Kills all vegetation quickly —SEE RESULTS IN A FEW DAYS! Spray, sprinkle or use as dry powder —works fast by working into waxy plant surfaces and penetrating to leaves, stems, roots. Non-inflammable, non-volatile, non-corrosive.

Dolge S S Weed-Killer

Kills all vegetation by working down to roots; sterilizes soil and prevents wind-blown seeds from sprouting. Economically sprayed on driveways, paths . . . reduces hand-clipping time and labor.

E.W.T. SELECTIVE WEED-KILLER kills broad-leaved plant pests without injury to good lawn grasses.

Write for literature and see your DOLGE SERVICE MAN

Dependable DOLGE

WESTPORT, CONNECTICUT

New Portable Dryer

H&B ESTABLISHED 1907

makes the *Moto-Patcher*

A Highly Efficient Hot Mix Plant

The addition of this new portable dryer makes the H & B Moto-Patcher a highly efficient hot-mix plant for all types of patching, including building up weak shoulders, also for use on driveways, parking areas and other small paving jobs.

The dryer drum is 8 ft. long by 30" diameter, with a drying capacity up to 10 tons per hour. Aggregate may be fed by hand or directly from truck by means of a small chute attached to the tail gate. There is a towing hitch for readily attaching to any standard make truck.

New Spreader Attachment

This spreader attachment, which is optional equipment with the Moto-Patcher, is 8 ft. wide and is fully adjustable to specified grade and crown, insuring a uniformly smooth surface even on irregular pavement.

Bulletin MPD-53 gives complete information on the Moto-Patcher, Dryer and Spreader. See your local H & B distributor or write direct.

HETHERINGTON & BERNER INC.

America's First Builders of Asphalt Mixing Equipment

737 Kentucky Avenue — Indianapolis 7, Indiana

BOWSER

THE OUTSTANDING NAME IN OIL CONDITIONING...

...for power generating equipment!

This Bowser turbine oil conditioning system keeps oil "bone dry" and crystal-clear . . . the best "stay-on-the-job" insurance a turbine bearing can have. Costly bearing failures are avoided and less stand-by equipment is required with Bowser oil conditioners. Turbine oil lasts for years, too! That's why Bowser oil conditioners are on the job in a majority of power plants.

May we send you complete data

BOWSER

BOWSER, INC., 1342 CREIGHTON AVENUE, FORT WAYNE 2, IND.

Regional Offices: • Atlanta • Cleveland • Dallas • Fort Wayne • Kansas City • New York • San Francisco • Washington, D. C. • Canadian Plant and Sales, Hamilton, Ont.

Don't Let Water Stop You!

The Manu-Mine organization can help you solve your difficult ground water problems through its contracting and consulting service. Specialists in:

1. Stopping the flow of water through walls, foundations, geological strata, etc., by chemical soil solidification
2. Stabilization of soils around foundations and footings
3. Water reservoir rehabilitation and construction
4. Ground water studies
5. Geological and mining studies
6. Air-placement of concrete
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Let us know your problem and we'll be glad to discuss it with you. Call or write:

Manu-Mine Research & Development Co.

P. O. Box 167, Reading, Pa. Telephone: 4-2778

Purchasing

Combination Fire Engine, Ambulance, Patrol Car

A combination ambulance, fire engine and emergency truck featuring a convenient arrangement of tanks, pumps, hose reels, stretchers and emergency kits on a General Motors truck chassis, is now in action in Menlo Park, N. J., Tarrytown, N. Y., and other cities.

This light, fast unit may be manned by one or two men and, located in a strategic area, it responds quickly to all first aid and emergency calls. As a fire-

Panels on both sides of the fire, ambulance, patrol auto are easily detached.

fighter, the truck carries its own water supply and is able to generate some 6,000 gallons of foam. As a patrol car, it will hold 12 men, and when used as an ambulance, there is ample room for three lying down patients and two sitting patients, or eight sitting patients plus the driver and attendant.

The FAPA (fire, ambulance, patrol auto) combines three vehicles in one. It eliminates the costly necessity of sending a crew of six to eight men on jobs that require one or two men.

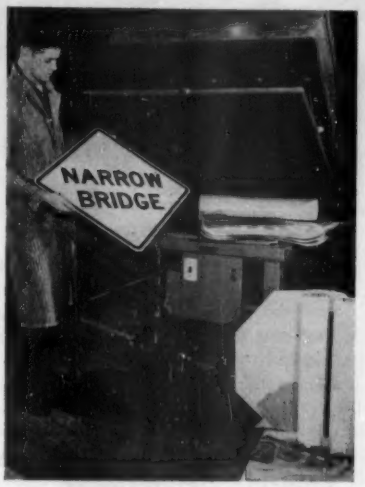
Details on the new unit are available from THE CHRISTOPHER CO., 66-70 BEAVER ST., NEW YORK 4, N. Y. Write directly, or take advantage of the Post Card on the colored page in this section. Circle No. 971.

Set Up Your Own Traffic Sign Shop

City officials who were unable to take advantage of the recent sale of traffic signing equipment offered by the Minnesota Mining & Mfg. Co., should benefit from this 60-day reinstatement of the sale. The offer, which began early this month, will run through September 30, and will include a special 36-inch heat lamp vacuum applicator to enable cities to establish their own modern sign maintenance shops.

The sale features the applicator; 30 yards of "Scotchlite" brand reflective

sheeting; 30 unmounted reflective STOP sign faces; 40 aluminum sign blanks, 24 x 24 inches; 12 sets of "Scotchal" brand plastic film cut-out letters; 12 cut-out curve symbols; 25 sets of border stripes; and three templates. The whole package



will cost $937.50, which is normally the price of the applicator alone.

The heat lamp applicator permanently adheres reflective sheeting to metal sign blanks in only three minutes, and may be used to reclaim and surface old sign blanks. It is fully described in literature from the MINNESOTA MINING AND MFG. CO., ST. PAUL 6, MINN. Write directly, or use the Post Card on the colored page in this section. Circle No. 977.

New Eastern Plant for Wayne Manufacturing

The Eastern Division offices and warehouses of the WAYNE MFG. CO., POMONA, CALIF., will locate in Newark, N. J., according to Charles M. Weinberg, company president. The firm recently purchased a 2-acre site in Newark, which is completely enclosed with wire fence and includes a masonry building.

Responsibility for putting the new plant into operation has gone to Webster G. Wiley, Wayne's vice-president in charge of sales. William S. Lake is scheduled to direct Eastern Division operations.

. . with this

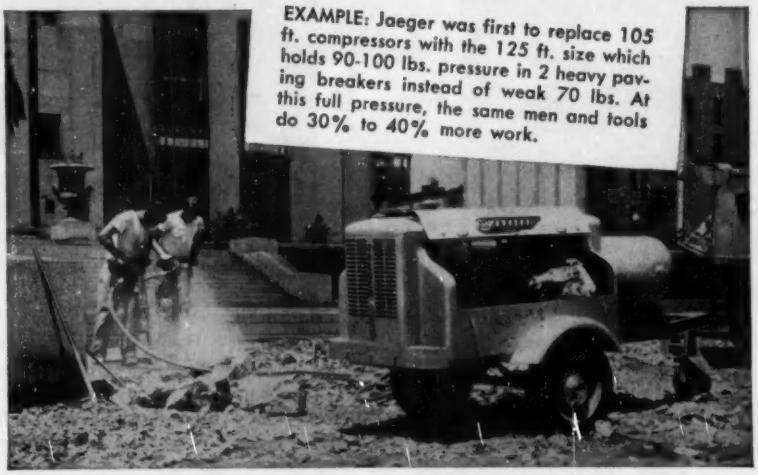
F & E INCINERATOR STOKER

Patents Pending

F&E Incinerator Stokers apply not only to new incinerator plants, but to many now existing furnaces. Results—up to 50% increased burning capacity; big reduction in labor; big reduction in maintenance.

F&E FLYNN & EMRICH CO.
301 N. Holliday St. ★ Baltimore 2, Maryland

Jaeger "air plus" puts full wallop into any set of tools



EXAMPLE: Jaeger was first to replace 105 ft. compressors with the 125 ft. size which holds 90-100 lbs. pressure in 2 heavy paving breakers instead of weak 70 lbs. At this full pressure, the same men and tools do 30% to 40% more work.

75 ft.
125 ft.
185 ft.
250 ft.
365 ft.
600 ft.

Comparable increases in production are obtained with all 6 Jaeger "new standard" ratings. Their performance has been proved-in-use by thousands of units in the field. First cost and operating cost, per cu. ft. of 100 lb. air, is far below any "old standard" size machine.

See your Jaeger distributor or write for Catalog JC-1.

THE JAEGER MACHINE COMPANY
505 Dublin Avenue
Columbus 16, Ohio

LOADERS • PUMPS • MIXERS • TRUCK MIXERS • PAVING MACHINES

flatten
cost curves
with UNIVERSAL
Flat-base pipe

conduits

highways

industry

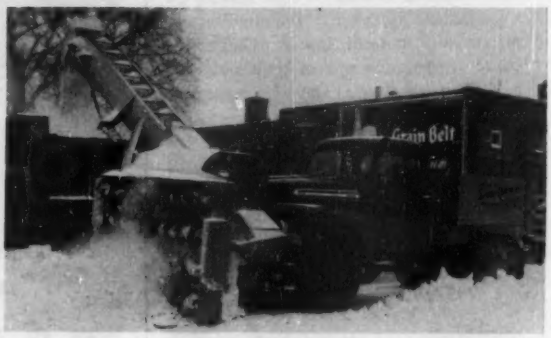
Pre-cast concrete pipe saves up to 30% over built-in-place methods. Easy installation. Up to 100 feet of UNIVERSAL Flat-base pipe can be laid and covered in one day!

Built for heavy duty, low maintenance. Flatten your cost curves . . . specify UNIVERSAL Flat-base concrete pipe. Write . . . we'll tell you more.

THE UNIVERSAL CONCRETE PIPE COMPANY
297 SOUTH HIGH STREET
COLUMBUS 15, OHIO
A subsidiary of the American-Marietta Co.

Purchasing News

Low-Cost Loader Speeds Snow Removal



Loading with the Kato - Nokes Snowloader reduces snow dust to a minimum.

Easily attached to any 1½ or 2-ton truck, the Kato-Nokes Snowloader will load up to five yards of snow in seconds, operating in fluffy snow, slush or hard-packed ice and snow. It is powered directly from the truck motor and operated from levers that are conveniently located in the cab of the truck.

The cutting edge of the new Snowloader breaks up the snow and ice and conveys it to a vertical elevator. The snow is then placed on a horizontal elevator and delivered to the truck. A swivel mounting enables the horizontal elevator to be stored along side the cab when traveling from place-to-place.

THE KATO ENGINEERING CO., 1415 FIRST AVE., MANKATO, MINN., will furnish full details. Write directly, or you may use the Post Card on the colored page in this section. Circle No. 979.

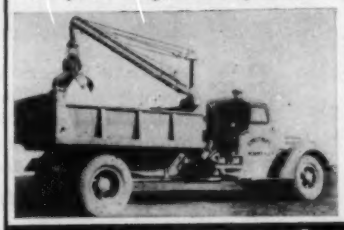
General Electric's Outdoor Lighting Department

The formation of two new General Electric divisions, an Outdoor Lighting Department and a Rectifier Department,

VERSATILE *KRANE KAR* SWING-BOOM CRANE
for Catch Basin Cleaning and *MANY* Other Jobs
Serving Municipalities Since 1918

ONE MAN can clean as many as 30 Basins a day! ***Simple operation:*** lowers bucket into manhole, raises filled bucket, tops and swings boom, empties bucket into truck.

With Hook, Grabs, Clamshell, Electric Magnet, and other available accessories, ***KRANE KAR*** speeds Construction, Maintenance, and Repair Operations . . . transports machinery, lays pipe, sets poles . . . handles scrap, curbings, sand, gravel. Self-stabilizing without jacks or outriggers.



TRUCK MOUNTED *"SILENT HOIST" SWING-BOOM CRANE* with Orange Peel Bucket affords efficient, dependable, trouble-free Catch Basin service. Crane occupies only 45" behind Cab. Illustrated Bulletin #67 gives full description. Write for it today!

SILENT HOIST & CRANE CO., 846 63rd ST., BROOKLYN 20, N.Y.

is announced by Harold E. Strang, vice-president and general manager of G. E.'s Measurement's and Industrial Products Division.

William J. Fleming has been named general manager of the new Rectifier Department, while L. Byron Cherry takes over as general manager of the Outdoor Lighting Department. Included on the Outdoor Lighting staff are: Harold J. Flaherty, manager-engineering; Carl N. Brown, manager-manufacturing; Fred D. Crowther, manager-marketing; and Harvey B. Schwalbach, manager-finance.

Metal Tags Identify All Municipal Equipment

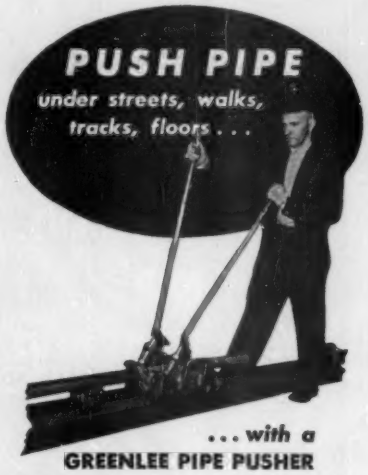
Cities can identify all municipal tools and equipment with new DASHaplate metal tags, constructed of aluminum alloy in sizes up to 3 x 5 inches and in colors. These tags are sun-proof, weather-proof, non-corrosive, and resistant to 14 chemical cleaning and plating solutions. They are precision die-cut, and feature bevelled edges to protect the operator's hands.

As many as four lines of data (20 characters per line) may be embossed on the DASHaplates. Embossing of repetitive information (for 10 or more plates) may be speedily accomplished on the DATAbosser, capable of producing 5,400 embossed plates per hour.

Variable data may be written on the metal tags with a new writing instrument of the fountain-pen type with a writing fluid suiting the special finish of the metal tags. Although this writing is as permanent as the tag itself, it may easily be erased with an ordinary pencil eraser for necessary changes.

The metal tags, either embossed or with written data, are sturdy in body, and will not pull off—even with rough handling. They may be affixed by wire, tacking, stapling, or pressure-sensitive tape.

An illustrated folder, *Positive Identification Control,* explaining the new identification program and the tools used for cost-reduction and efficiency, is available from DASHEW BUSINESS MACHINES, INC., 5886 SMILEY DRIVE, CULVER CITY, CALIF. Write directly, or you may use the Post Card in this section. Circle No. 958.



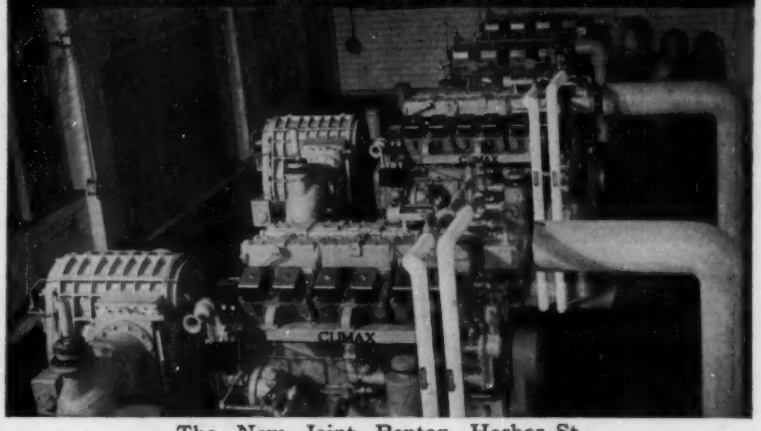
. . . with a
GREENLEE PIPE PUSHER

Speed jobs with this quick, simple way to install underground pipe. With the GREENLEE *one man* pushes pipe under obstacles . . . no tearing up of pavement, floors, lawn . . . eliminates extensive ditching and tedious backfilling! Two models and special power pump to fit your various jobs. Write for facts today.

GREENLEE

Greenlee Tool Co., 2028 Columbia Ave., Rockford, Ill.

climax BLUE STREAK ENGINES
IN NEW SEWAGE TREATMENT PLANT



The New Joint Benton Harbor–St. Joseph, Mich. Sewage Treatment Plant designed to serve an equivalent population of 75,000 is in full operation.

A novel feature is that it is of the split activated treatment type with provision for 8 MGD primary and 4 MGD secondary flow. The sewage pumps are driven by two 100 H.P., 720 RPM, 8 cylinder, Climax sewage gas engines having automatic speed control which can vary the pumping capacity from 1½ to 12 MGD.

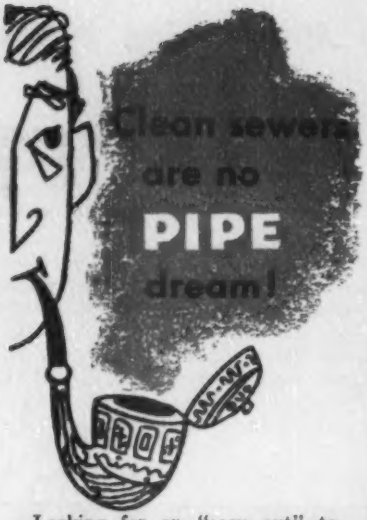
Two 4100 CFM blowers are driven by 160 H.P., 720 RPM, 12 cylinder, Climax sewage gas engines equipped with governors having manual control for speed variation.

Climax engines were selected because of their known economy, dependability and flexibility.

This treatment plant was designed by and built under the supervision of Consoer, Townsend & Associates, Engineers.

climax

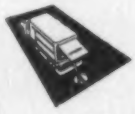
FOR COMPLETE INFORMATION, WRITE TO . . .
ENGINE AND PUMP MFG. CO.
208 So. La Salle St.
CHICAGO 4, ILLINOIS
Factory–Clinton, Ia. *District Office*–Dallas, Tex.



Looking for an "easy out" to your water and sewer line cleaning problems is no idle pipe dream! Water and sewer lines *can* be restored to original efficiency! Old, partially clogged or completely useless systems can be reclaimed for a fraction of replacement costs through our nationally available power rodding and bucketing service. Expert crews, with the most advanced equipment, bring fast, efficient *and low cost* sewer cleaning service to municipalities and industries from coast to coast.

PROOF? Send for the booklet "NOW REBORE" which contains extensive information on the NATIONAL POWER RODDING CORPORATION method of sewer and water main restoration and lists the scope of success the National Power Rodding Corporation has enjoyed with municipalities, institutions, industries, estates, etc., everywhere. Send coupon below.

National Power Rodding Corporation



4600 W. Madison St. • Chicago 44, Illinois
MAnsfield 6-8366

NATIONAL POWER RODDING CORP.
Dept A-3, 4600 W. Madison St.
Chicago 44, Ill.

Please send booklet "NOW REBORE"

Name_____
Position_____
Address_____
City_____ Zone____ State_____

Purchasing

New Duplicating Process

A new short run duplicating process will make up to 50 clearly legible copies without staining hands.

Two duplicators are offered, an electrically operated machine and a hand-operated model. Both machines are also suited for aniline dye process duplicating. The fluid used in the new Azograph process may be used to produce copy for either Azograph or aniline dye work. The combination of the two processes adds new versatility to duplicating.

The task of correcting duplicating masters is simplified by the new Azograph process. Errors on the master are erased as easily as a pencil mark.

For full details, write A. B. DICK CO., 5700 TOUHY AVE., CHICAGO 31, ILL., or use the Post Card on the colored page in this section. Circle No. 972.

Make Your City's Park Benches

When park benches are not readily obtainable, it is well for a town to be in a position to construct them.

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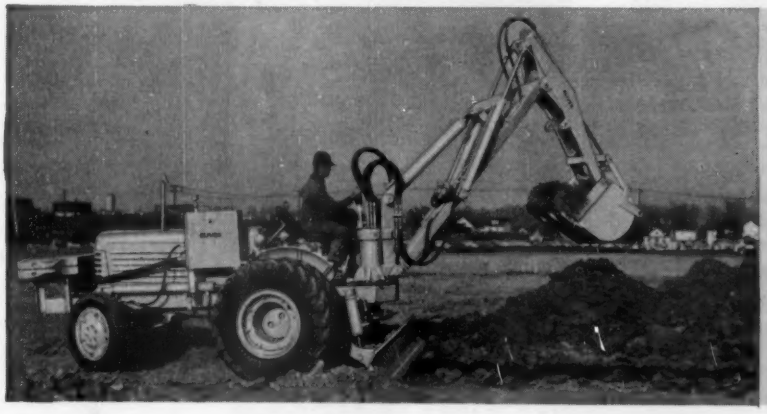

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About People

Martin B. Jaeger succeeds Emory H. Heuston as publicity manager of the **Bucyrus - Erie Co.**, South Milwaukee, Wis. Associated with Bucyrus - Erie for the past 11 years, Mr. Jaeger recently served the firm as assistant publicity manager. In his new position he will direct the company's product advertising and publicity programs.

Martin Jaeger

Scheduled to head the New York-New Jersey district sales office of the **Neptune Meter Co.**, is Charles W. Krause, former assistant sales manager for petroleum and industrial meters. The new district office, reports Wentworth Smith, Neptune's vice-president in charge of sales, will be located at 19 West 50th St., New York City.

When Olin Industries, Inc. and the Mathieson Chemical Corp. merge to form the **Olin Mathieson Chemical Corp.**, the new company will be headed by John M. Olin, chairman of the board, and Thomas S. Nichols, president. At present, Mr. Olin is president of Olin Industries, while Mr. Nichols is president and chairman of the board of Mathieson. Chairman of the finance committee of Olin Mathieson will be John W. Hanes, former financial vice-president of Olin.

W. M. Taylor, recently resigned sales manager of the **Autocar Div.** of the **White Motor Co.**, Exton, Pa., will be succeeded by Harry L. White, according to Edward F. Coogan, Division vice-president. Mr. White is a vice-president of the Autocar Sales and Service Co., and a former manager of the firm's Pittsburgh branch.

Harry White

From Carl N. Brown, sales manager for the **United States Pipe and Foundry Co.**, Birmingham, Ala., we learn of the appointment of John C. Finn as company sales agent for the New England states. Mr. Finn, who succeeds R. E. Sweeney, is well known to members of the water, gas, and sewerage industries in New England.

Three partners have been added to the consulting engineering firm of **Parsons, Brinckerhoff, Hall & Macdonald.** They are John O. Bickel, Rush F. Ziegenfelder, and William H. Bruce, Jr. Other members of this eight-man team include Eugene L. Macdonald, senior partner; Lawrence S. Waterbury; Maurice N. Quade; Walter S. Douglas; and Alfred Hedefine.

The retirement of Lewis McDonald from the **Chicago Bridge & Iron Co.**, Chicago, Ill., brings to a close his 44-year association with that firm. Mr. McDonald was vice-president and assistant to the chairman of the board. Additional news from the company discloses the appointment of Fred L. Goldsby as general sales manager; George S. Trees, assistant general sales manager; and Robert P. Davies, export manager.

Fred Goldsby

George Trees

An announcement from the Heavy Machinery Division of the **Nordberg Mfg. Co.**, Milwaukee, Wis., tells of the appointment of E. L. Farrell as district manager for the firm's Milwaukee territory, and William C. Young as district manager of the Great Lakes territory. The Milwaukee territory, under the Nordberg set-up, takes in Wisconsin, Minnesota, Iowa, and Northern Illinois. Comprising the Great Lakes territory are Michigan, Indiana, Ohio, Western Pennsylvania, and Eastern Kentucky.

New general manager of the **Worthington Corporation's** reorganized Vertical Turbine Pump Division is Fenmore Dunn, who will locate at the firm's Succasunna (N. J.) Works. Among his responsibilities will be product and application engineering, and the manufacture and sale of vertical turbine pumps made at Succasunna and another Worthington plant in Denver, Col.

George Murphy is scheduled to supervise the sale of the new Heil Colectomatic refuse unit, according to W. A. Carlson, Body and Hoist sales manager of **The Heil Co.**, Milwaukee, Wis. Mr. Murphy is a former manager of the New York branch of Gar Wood Industries.

Robert H. Morse, Jr., president of **Fairbanks, Morse & Co.**, Chicago, Ill., informs us of the appointment of two new officers; R. H. Morse III and W. E. Watson. R. H. Morse III, new assistant to the vice-president of sales, will make his headquarters in Chicago. Mr. Watson will locate in Wisconsin as manager of the company's Beloit (Wis.) Works.

R. H. Morse III

W. E. Watson

Gar Wood Industries, Wayne, Mich., has reorganized its sales activities under the direction of E. B. Hill, a vice-president of the firm. Mr. Hill, now director of sales, will be in control of the centralized sales and marketing functions of all divisions of the corporation and of the National Lift Co., a subsidiary. Gar Wood factories are located in Wayne and Ypsilanti, Mich.; Mattoon, Ill.; Findlay, Ohio; and Richmond, Calif.

When A. R. Whittaker leaves his job as general manager of the **Rockwell Manufacturing Company's** Water Meter Division to become director of the company's water meter research and development, he will be succeeded as general manager by Roy C. Kain. Mr. Kain is former assistant general manager of the Division.

A. R. Whittaker

Roy Kain

A new president and vice-president have been announced for the **Centriline Corp.**, a subsidiary of the **Raymond Concrete Pile Co.** Centriline's new president is William E. Borbonus, and its vice-president and chief engineer, Kenneth K. Kirwan. Mr. Borbonus succeeds James P. Cummins, who was recently assigned to the sales department of the Raymond Concrete Pile Co.

William Borbonus

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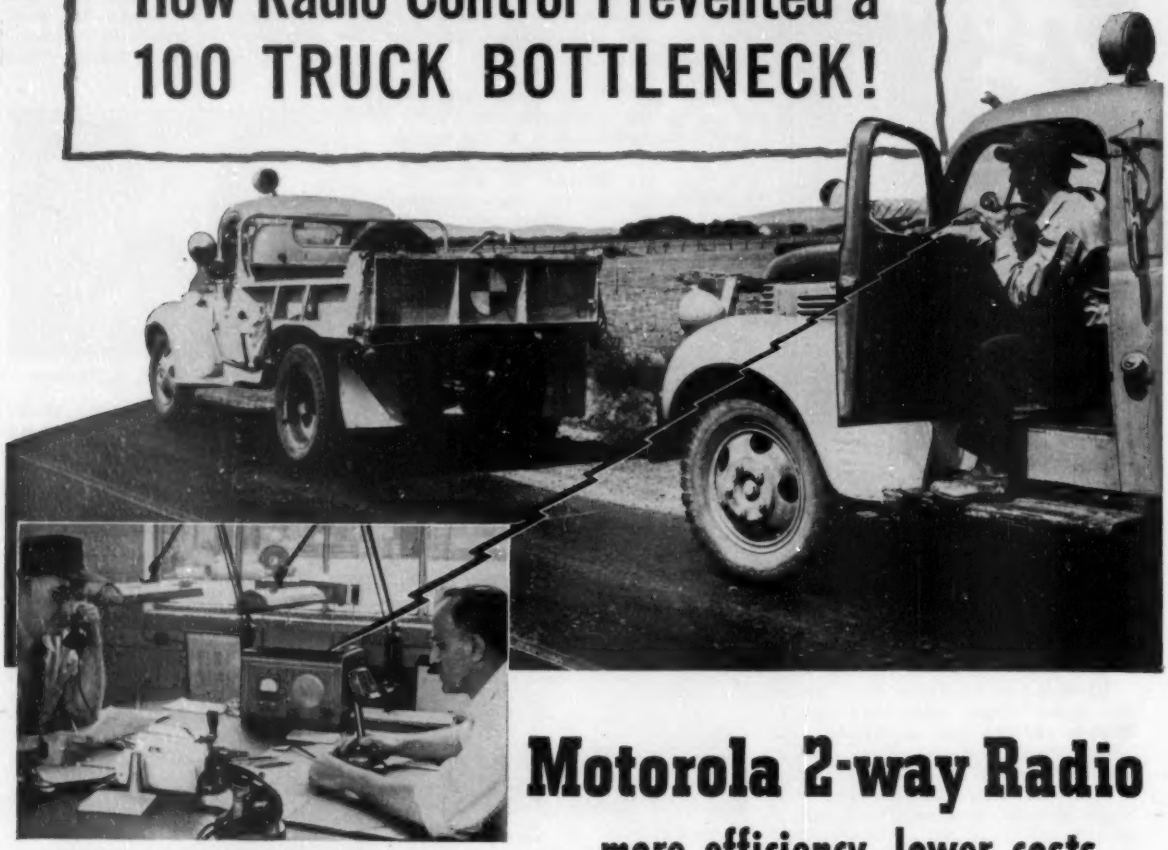

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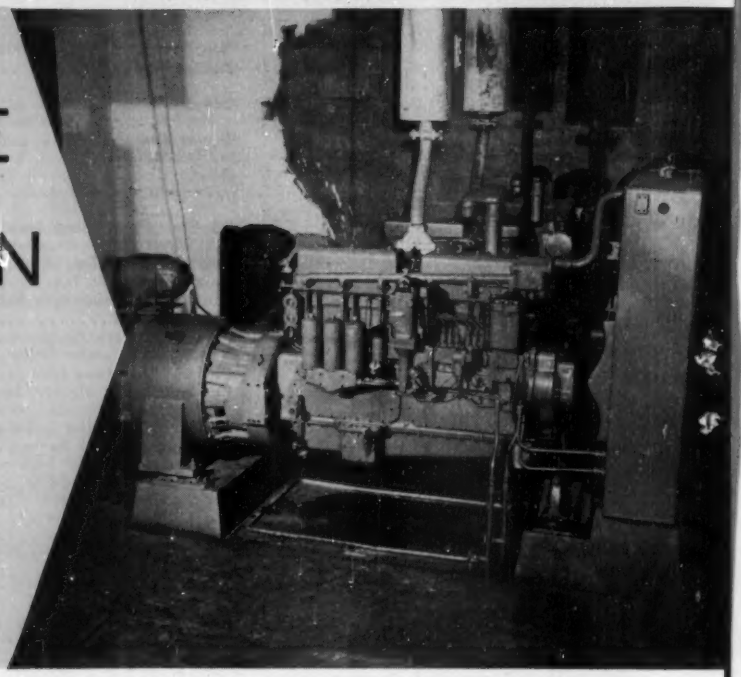
HERE'S WHERE A WHOLE TOWN GETS ITS **POWER**



Offhand, there are two interesting things about the neat little city of Kanopolis, Kansas. It's almost dead-center in the U. S. And it's powered *entirely* by the two CAT* D13000 Diesel Electric Sets you see here.

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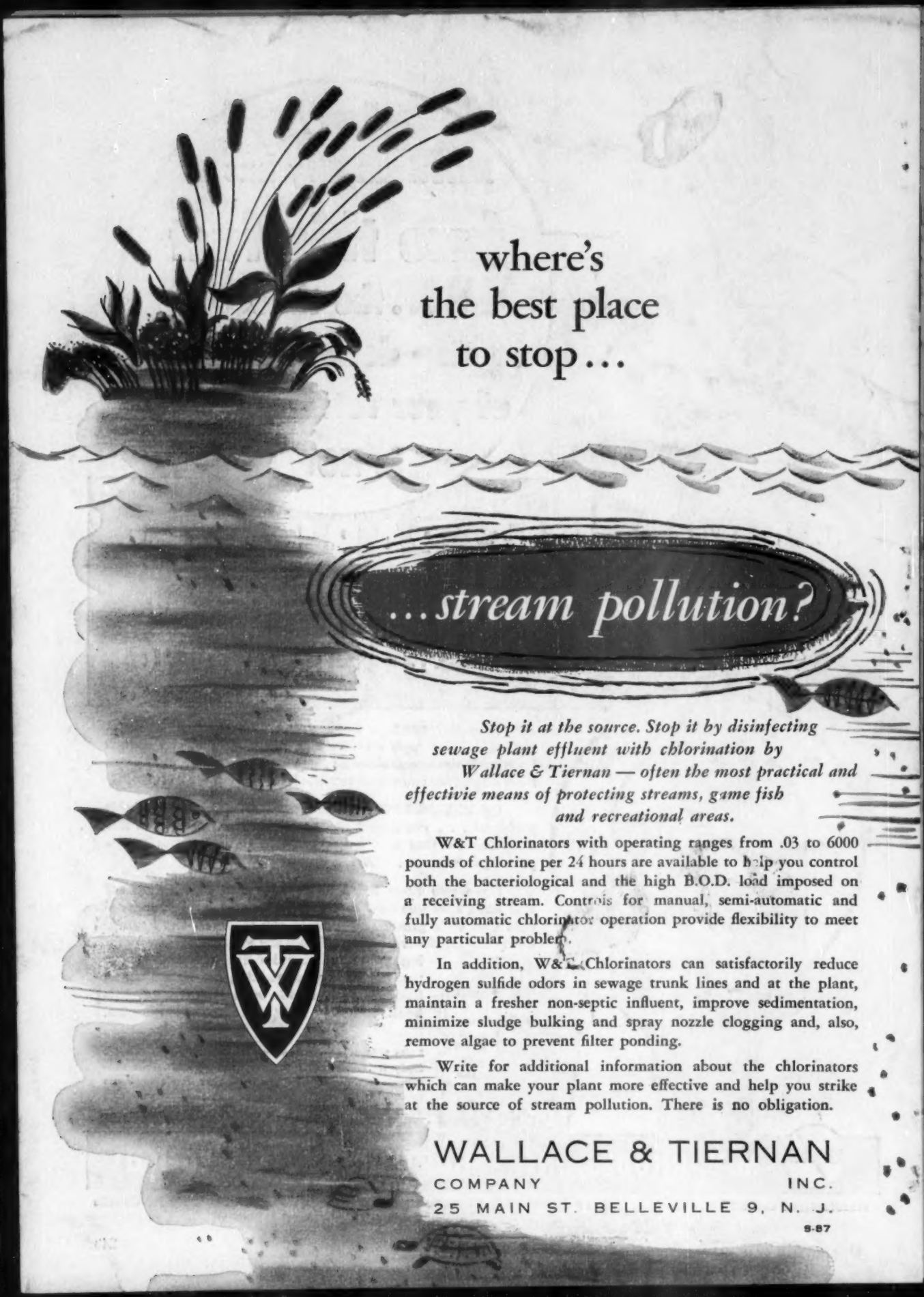

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